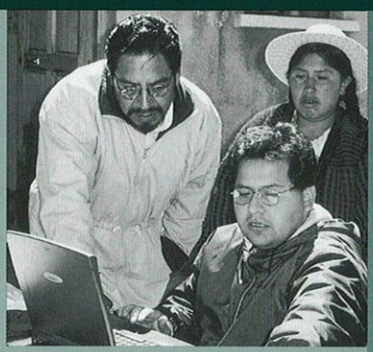
Angola MCH Project: Final Report

Strengthening Maternal and Child Health Services in Angola

Prepared by Management Sciences for Health

MSH MANAGEMENT SCIENCES *for* HEALTH



Strengthening health programs worldwide

Amended April 2006

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List of Acronyms

ARI	acute respiratory infection
BCC	behavior change communication
BCG	Bacillus of Palmette and Guerin
CAOL	Coordenação das Actividades Obstétricas de Luanda
CAPEL	Coordenação das Actividades Pediátricas de Luanda
CARE	Cooperative Assistance and Relief Everywhere
CQ	chloroquine
CQI	continuous quality improvement
DMPA	Depot Medroxyprogesterone Acetate
DNSP	(NDPH) Direcção Nacional de Saúde Pública
DPSL	Direcção Provinciais de Saúde de Luanda
FP	family planning
IEC	information/education/communication
IMC	International Medical Corps
IMCI	integrated management of childhood illnesses
IPT	integrated preventive treatment
IUD	intra-uterine device
MCH	maternal and child health
MOH	National Ministry of Health (MINSA in Portuguese)
MPLA	Popular Movement for the Liberation of Angola
MSH	Management Sciences for Health
NGO	non-governmental organization
OJT	on-the-job support
ORT	oral rehydration therapy
ORS	oral rehydration salts/ solution
PAC	post-abortion care
PHC	primary health care
PNC	Prenatal Care
PVO	private voluntary organization
RBM	Roll Back Malaria
RH	reproductive health
SAVE	Save the Children Federation/U.S., Inc.
SDAP	Service Delivery Assessment Protocol
SDA	Service Delivery Assessment
SIDA	Swedish Agency for International Development (SIDA in Portuguese)
SP	sulfadoxine-pyrimethamine
STI	sexually transmitted infections
TBA	traditional birth attendants
TOT	Training of Trainers
UNITA	National Union for the Independence of Angola
USAID	United States Agency for International Development
WHO	World Health Organization

Executive summary

From May 2002 through September 2005, Management Sciences for Health (MSH) and two implementing partners (International Medical Corps and Save the Children/USA) provided technical and financial support for Strengthening Maternal and Child Health in Angola. This project – renamed Reforço ("reinforcement" or "support" in Portuguese) – significantly improved the quality of health care in four Luanda health centers and pioneered efforts to develop PVO-MoH partnerships in two provinces. The total cost to the US Government, originally budgeted at $7,332,607, was eventually $4,930,909. In addition, MSH and its implementing partners generated more than $800,000 in cost share contributions[1].

This report details the achievements as well as shortfalls of Reforço and discusses a number of lessons learned for program design in Angola.

Reforço came at a difficult moment of passage in Angola's evolution from wartime emergency to sustainable development. Previous health program support (especially outside Luanda) had largely focused on humanitarian assistance rather than systems development. Skilled manpower was scarce, the citizenry predominantly dependent on public sources for health care services and supplies. Community work was stymied by a history of social disorganization and political control. The central MoH had only weak links with the provinces, and the latter planned and requested resources based on local priorities rather than national policies. The challenges were great.

Objectives and results

Reforço sought to "increase use of maternal and child health (MCH) services and/or products and improved health practices." (This – plus "HIV/AIDS services" – was the wording of the USAID mission's Health Strategic Objective at the time of project design.) It supported three Intermediate Results:

7.1 Increased access to MCH services
7.2 Increased demand for MCH services
7.3 Increased quality of MCH services

As detailed in Section II, Reforço contributed to several of the mission's higher level objectives, although in some cases the effects can only be measured by proxy:

- *"Infant and child health and nutrition improved and infant and child mortality reduced:"* Child health and service quality indicators improved within Reforço's Luanda service area, including indicators of morbidity (partially subject to

[1]Based on final figures.

seasonality effects), service utilization (proportions treated), and quality of care (proportions treated appropriately). The proportion of infants exclusively breastfed at six months rose by almost 41 percent in just 30 months.

- "*Unintended and mistimed pregnancies reduced*:" Modern method contraceptive prevalence rose from 17.1 to 26.4 percent (a 51 percent increase) within Reforço's target area. This is expected to have contributed to reduction of unintended and mistimed pregnancies.
- *"Deaths, nutrition insecurity, and adverse health outcomes to women and children as a result of pregnancy reduced*:" The proportion of deliveries in health centers increased by 31 percent in the project service area, and tetanus toxoid coverage by 42 percent. These changes – along with the increase in contraceptive prevalence cited earlier, are expected to have reduced the number of pregnancy complications.
- "*Threat of infectious diseases of major public health importance reduced*:" Changes appeared to have occurred in the Reforço area between December 2002 (project baseline) and June 2005 (follow up survey), but the factors behind them are unmeasured. The reported incidence of diarrhea, ARI and malaria, for example, was lower in June 2005 than at baseline, but this may have been due to seasonality and other unquantifiable factors. The appropriate use of mosquito bednets increased dramatically among those with access to nets, but UNICEF, PSI and the National Malaria Control Program also conducted educational campaigns. Vaccine coverage remained constant, but implementation strategies were determined by the MoH's reliance on campaigns rather than routine service delivery.

Reforço's most outstanding contribution was to quality of care and to systems for ensuring quality. Within the space of 15 months, four participating clinics were able to raise their compliance with pre-defined quality criteria from 21 percent to 67 percent, using team-based techniques for problem-solving and performance improvement. This was not a donor-driven model but rather one that the Ministry of Health felt able to replicate in other locations. The Health Directorate for Luanda incorporated the 79 quality criteria into its routine supervision system and planned to replicate the QI approach in 25 clinics by January 2006.

Reforço's effort to develop a replicable model for provincial expansion largely failed, although much was learned about what to do and not do in working with provincial health departments and PVOs. The provincial situation was evolving rapidly during the project period, and Reforço was not able to establish the same level of commitment that it had with the province of Luanda.

Lessons learned

Despite positive results, Reforço disappointed some observers and could perhaps have achieved more with somewhat different management approaches. Despite disappointments, some very important lessons were learned for future programming and implementation. Perhaps most importantly:

- **Systems development provides an essential framework for technical interventions and may be best organized around quality improvement**. Reforço demonstrated that functional management systems are essential for the effective introduction of new technical approaches. Training only works if supervisors directly and frequently reinforce it. Clinic upgrading and introduction of new treatment protocols only work if pharmaceutical supplies are available. Teams can only be motivated if provided with data to assess their own performance. Efforts to bring communities to appropriate preventive and curative care work much better if clinic quality and staff responsiveness improve.
- **Partnerships add enormously to project effectiveness when they are in place, but are seriously missed when they are weak**: Reforço succeeded in bringing the entire Roll Back Malaria consortium together, and was widely praised for facilitating the joint development of protocols for intermittent presumptive treatment (IPT) of malaria in pregnancy. The project generated substantial cost share from both PVOs and the private-for-profit sector. It won many friends for USAID by working closely with the Luanda Provincial Health Department. Absence of strong partnership was perhaps felt most seriously in provincial expansion: the project attempted to develop three-way partnerships with PVOs, provincial health departments and Reforço, and had difficulty developing viable expansion models without them.
- **Development of health services beyond Luanda, while urgent, requires creativity and flexibility, as well as willingness to adjust methods as environments and partnerships evolve.** Success at this level requires delegation of discretionary authority over planning and budgets to provincial and municipal health authorities. At the same time, these local bodies must be held accountable for working within national norms and standards toward achieving national public health goals. Local interests and capabilities vary widely, hence implementation models will vary as well.

Perhaps the single most important lesson is that transitional periods require creativity, strong local leadership, and a facilitative project management style that broadens counterpart perspectives. Project staff must be deeply sensitive to political realities but creative in identifying and following through on opportunities.

I. History and context

A. *War and destruction of health system*

The extreme political instability in Angola after independence from Portugal in 1975 brought about a protracted civil war that only ceased in 2002 with the death of Jonas Savimbi. Civil war devastated the country's health services, leaving a legacy of inferior health indicators that remain some of the worst in the world: around 35 women die every day in childbirth or pregnancy-related complications; and only 710 of 1,000 children survive their fifth birthday.

Angola emerged from civil war in 2002, and after more than twenty-seven years the country was finally at peace. The violence and expense of war had prevented development of an adequate health care infrastructure, destroying facilities and causing staff to flee. Peace provided an opportunity for the Government to focus on the basic needs of its population and to strengthen provision of social services; hopefully, the population will now be able to move out of poverty and ill health toward healthier and more productive lives. Rebuilding Angolan society must include rebuilding of a basic public health system that can provide both curative and preventive services.

B. *Strengthening Maternal and Child Health in Angola: Contract award and initial adjustments*

With an interest in post-conflict reconstruction and institution-building, USAID designed its first health development effort in collaboration with the Angolan Ministry of Health (MoH) in 2002. The project's principal focus was the strengthening of maternal and child health care (MCH) services in Luanda; and its systems approach indicated a shift from emergency relief activities with American private voluntary organizations (PVOs) to development work with the MoH as its principal partner. USAID and the MoH together designed the MCH project to respond to two distinct needs: Angola's immediate public health crises, such as maternal and infant morbidity and mortality, as well as health system strengthening. MSH and its partners, International Medical Corps (IMC) and Save the Children/USA (SCF), were awarded this four-year cooperative agreement in 2002.

Though USAID and the MoH had jointly developed the scope of the MCH project, by the time of implementation it became clear that these two parties had different visions of what Reforço would entail. The MoH had hoped that the new USAID project would replace one run (through 2002) by the Swedish Agency for International Development (SIDA). Like the new USAID project, SIDA focused on infrastructure improvements, health supplies, and technical assistance. But it also covered the whole of Luanda City, whereas USAID had a more limited scope and budget.

USAID expected that the shift from emergency to development assistance would lead to increased resources, and that the new project would provide technical assistance while

the Government of Angola itself would invest in health infrastructure. These additional resources were not forthcoming, however.

The Provincial Directorate of Health for Luanda (DPSL) assumed the role of project champion from the beginning. Project staff and the DPSL jointly determined programmatic interventions. This strong partnership, still praised by MoH officials, opened doors for project staff at the operational level and overcame constraints that might have otherwise impeded shared goals.

C. Phases I and II in Luanda

Figure 1 provides a detailed chronology of project implementation.

Figure 1. Reforço Project Timeline

➢ **May 1, 2002**	USAID Cooperative Agreement #654-A-00-02-00019-00 awarded to Management Sciences for Health, International Medical Corps, and Save the Children/USA
➢ **June 2002**	USAID announces reduced first-year funding and scope for Reforço; project focuses on six facilities
➢ **August 4, 2002**	Chief of Party Jaime Benevente arrives in Luanda
➢ **October – November 2002**	Service Delivery Assessment
➢ **November – December 2002**	Baseline household survey
➢ **January 2003**	MoH workshop to set priorities
➢ **February – March 2003**	Quality Improvement Initiative begins; first quality assessment
➢ **March 2003**	USAID announces further reduction; project reduces Luanda coverage to four facilities but starts to explore provincial expansion
➢ **March 2004**	Revision of Quality Initiative, second quality assessment
➢ **June 2005**	Follow up household survey
➢ **September 2005**	Reforço project ends

Under the original agreement, the new project was to cover northern Luanda's entire health network: nine health centers, twelve health posts and one municipal hospital.

Citing temporary financial constraints, USAID, scaled back the project's first year funding in June 2002. With reduced funding, the project re-focused on six health centers (later reduced to four), with some additional interventions in the municipal hospital. The reduced coverage area included the Cazenga, Viana and Cacuaco municipalities, with a population of two million people, representing 40 percent of Luanda's total. Figure 2 shows their location:

Figure 2. Areas of intervention in Luanda

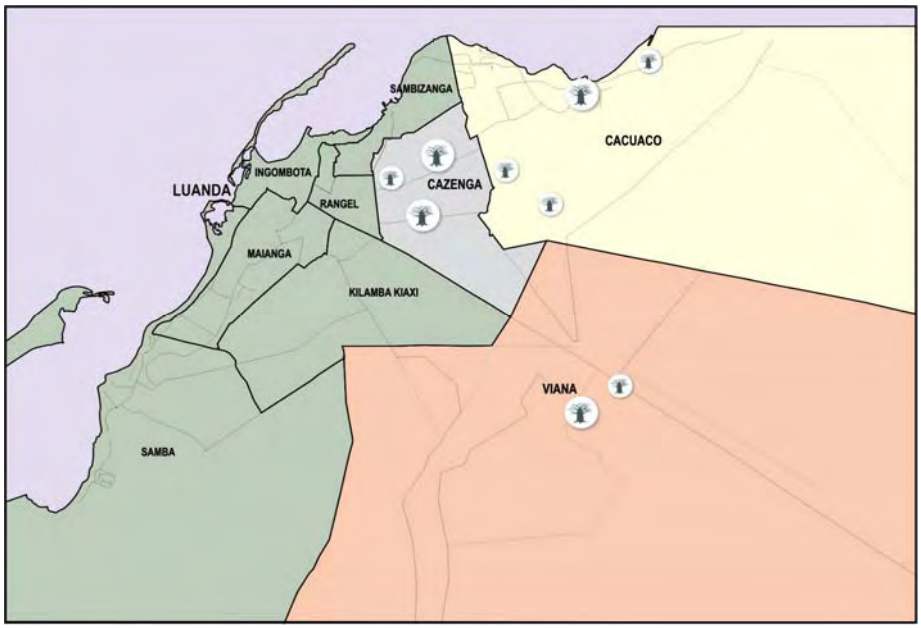

Table 1. Population served by original Reforço facilities*

Health Centers	Total Population	Population Under 1 yr	Population 1 to 4 yrs	Women 15 to 49 yrs	Pregnant Women
Kicolo*	107,325	5,688	17,923	22,431	6,547
Cacuaco Sede	83,475	4,424	13,940	17,446	5,092
Viana II	81,063	4,296	13,538	16,942	4,945
Viana Sede*	99,805	5,290	16,667	20,859	6,088
Hoji ya Henda	174,067	9,226	29,069	36,380	10,618
Asa Branca	155,938	8,265	26,042	32,591	9,512
Total	**701,673**	**37,189**	**117,179**	**146,650**	**42,802**
(Total 2003-2005)	**494,543**	**26,211**	**82,589**	**103,360**	**30,167**

*Asterisks identify two health centers dropped after the first year.

The Reforço project aimed to increase and improve MCH services in these facilities, with the additional goal of helping the DPSL integrate the local health units into a comprehensive system with appropriate referral processes. The project later expanded its interventions to include Cajueiros Hospital, which serves as a referral hospital to all three municipalities.

In March 2003, USAID reduced Reforço's scope and level of effort to four clinics: Asa Branca and Hoji ya Henda health centers in Cazenga, the Cacuaco health center, and Viana II health center in Viana. Because of available funding, moreover, USAID and the MoH decided that the project's work should concentrate on a few model facilities, creating demonstrations of what would be necessary to strengthen the health system in Luanda.

D. *Provincial expansion*

Also in 2003, USAID asked Reforço to extend its MCH interventions into two severely damaged rural provinces. The objectives were: a) to rebuild MCH service delivery in select municipalities; b) to promote community involvement; c) to reinforce overall management and planning capacity of provincial and municipal health teams; and d) to develop a model for local health system strengthening that could be replicated in additional municipalities and provinces. Reforço selected expansion provinces in conjunction with USAID and two MoH units (CAPEL and CAOL). Criteria included: USAID priority province; MoH commitment to the area; local technical assistance from PVOs; and presence of at least a basic health system (provincial office, two or three health centers, and a referral hospital). In the end, Kwanza Sul and Bié were chosen.

As in Luanda, Reforço's provincial expansion moved through several phases:

- During the first phase, from May 2003 to April 2004, Reforço considered a variety of provincial partnerships with a number of PVOs, leading to selection of CARE and Save the Children (SCF or SAVE). Given MoH capacity at the time, the emphasis was on PVO support to direct service delivery in partnership with provincial health departments.
- Emphasis shifted during the following year to development of MoH provincial and municipal teams, in partnership with PVOs.
- During the final phase, from May until September 2005, there was a conscious shift in focus to consolidate gains and install a critical mass of training capacity within the provinces.

Details on the provincial expansion effort are covered later in this report and in Annex 2.

E. *Needs assessment and priority setting*

Two data sources were used for initial needs assessment and priority setting:

- A service delivery assessment conducted in September-November 2002
- A household survey conducted in November-December of the same year.

Service delivery assessment

The first used a comprehensive Service Delivery Assessment Protocol (SDAP), developed by MSH in other countries. Project and MoH staff observed services and interviewed personnel at each of the six participating facilities, determining the number of clients served, facility staffing, the type of MCH services provided, provider knowledge in key technical areas, the content of specific MCH consultations, pharmacy functions, supplies available for service delivery, infection treatment methods, and the availability of educational materials for clients.

Problems identified in the assessments spanned management, pharmaceutical, and direct service areas, indicating overall non-compliance with existing MCH norms and guidelines. Briefly, the target health centers were poorly designed and maintained; clients had little privacy; norms and standards were generally unknown and service providers did not comply with them; common diseases were often misdiagnosed and incorrectly treated; health centers did not keep client records and where they did, records were incomplete and unsystematic; and the limited service statistics that were available were not used for decision-making.

Household survey

The household survey covered 1,621 households and 2,236 women, and gathered information on 2,344 children under 5. Results showed that:

- **Fifty-three percent of those needing medical attention in the previous two months went to a public facility.** Another 11 percent accessed private sources, while 35 percent reported that they had self-medicated.
- **Nearly 84 percent of recently pregnant women attended antenatal consultations**. Over 60 percent delivered in a health facility with professional assistance. Only one-third of women, however, had received a postpartum check-up.
- **The most prevalent childhood diseases were malaria (24 percent in past two weeks), ARI (21 percent) and diarrhea (18 percent).** Among those with malaria symptoms, 70 percent went to a health facility, but only 57 percent of those received anti-malaria drugs. Among those with a diarrheal disease, 45 percent were treated but only 28 percent of those received oral rehydration (ORT). (See the section on child health for additional data.)

- **Modern method contraceptive prevalence was 17 percent, usually oral contraceptives or DMPA.** Thirty percent of women knew of at least one modern contraceptive method, although implants, diaphragm and sterilization were practically unknown. Among women who did not use any contraceptive method, 45 percent intended to do so in the future.

F. *Evaluation strategy: Baseline and follow up studies*

Reforço's evaluation plan used two major data sources:

- Household surveys, conducted in November 2002 and June 2005
- A series of quality assessments in four Luanda clinics extending from April 2004 to June 2005.

The household surveys provide data on population-level impact, specifically on service utilization, contraceptive prevalence, and treatment of childhood illnesses. The two surveys used the same data collection instrument, but were drawn from slightly different populations -- the first based on six health centers, the second on four. Comparisons between catchment areas in the first sample show few significant differences, indicating that the November 2002 survey provides a reasonable baseline for the June 2005 follow up. Certain comparisons, especially those for disease incidence, may be weakened because of seasonal differences. Further verification of the results would require calculating confidence intervals of the differences between the 2002 and 2005 data and disaggregating the data.

The series of quality assessments measured quality of care, in relation to 79 criteria. (See Annex 1 for a list of these criteria.) Project staff and MoH counterparts also conducted service delivery assessments in Luanda, Kwanza Sul and Bié, using the Service Delivery Assessment Protocol (SDAP) and provided intensive support for the government's routine service statistics system.

II. The Reforço strategy and its impact on the population

Reforço's overall objective was to increase the use of maternal and child health services and/or products and to improve health practices. The project adopted a three-pronged strategy, focused on quality, access, and community behavior change.

Comparison between 2002 baseline survey and the 2005 follow up show **significant changes at the household level**.

- Modern method contraceptive prevalence rose by 51.7 percent, from 17.4 to 26.4 percent, in just two and half years. [2]
- The proportion of children sleeping under mosquito nets (in households possessing such nets) rose from 28.7 to 91.7 percent, a dramatic increase of 220 percent. (However, the proportion of households with nets – a factor outside the project's control – decreased during this period.)[3]
- The proportion of children under six months of age being exclusively breastfed rose by 40.7 percent, from 20.4 to 28.7 percent.
- However, the proportion fully immunized under age one rose only 8.4 percent, from 27.5 to 29.8 percent.
- The proportion of pregnant women receiving two doses of tetanus toxoid increased from 66.5 to 94.6 percent (42.3 percent) in two and half years.
- The proportion of deliveries occurring at health centers and attended by trained professionals rose from 55.7 to 73.1 percent (a 31.2 percent improvement).
- The proportion of pregnant women receiving two doses of Vitamin A increased from 48.9 to 61.8 percent (a 26.4 percent change).

At least in part because of project interventions, the incidence[4] of diarrhea, ARI and malaria fell by 18 to 40 percent between December 2002 and June 2005. Incidence of diarrhea fell from 17.7 to 10.6 percent, ARI from 20.8 to 17.1 percent, and malaria from 25.8 to 17.6 percent. Moreover, the proportion of such cases treated correctly (at least as based on survey evidence) rose for all three conditions:

- ARI: 15.1 percent treated with antibiotics at baseline, 20.5 percent at follow up
- Diarrhea: 25.0 percent treated with oral rehydration solution (ORS) at baseline, 35.6 percent at follow up

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[2] In Malawi and Zambia, respectively, CPR increased from 7.4% to 26.1 between 1992 and 2000 and from 8.9% to 22.6% between 1992 and 2001-02. (DHS). Given these substantial increases at a country-wide level, it is reasonable that a project in a defined area would increase CPR from 17-26% over a two and half year period. The level of unmet need in most African countries is such that this gain could be expected when providing access and quality to FP services.

[3] Note that parallel UNICEF and NMCP campaigns may have been more important than Reforço outreach, in determining this result.

[4] Incidence over the past two weeks.

- Malaria: 48.0 percent correctly treated at baseline, 52.3 percent at follow up.

Reforço worked towards three Intermediate Results defined by USAID at the time of project design, namely:

IR 7.1: Increased access to MCH services
IR 7.2: Increased demand for MCH services
IR 7.3: Increased quality of MCH services

However, the improvements quantified above reflect *mutually reinforcing* improvements under all three IRs. In particular, many of the steps taken to increase quality (e.g., training, improved service organization, infrastructure development) simultaneously changed public demand and increased accessibility. Service improvements, enhanced access, and increased public knowledge, are all likely to have contributed to epidemiological changes as well. Thus, this report is not organized by IR but by eight particular areas of Reforço work, namely:

- The Quality Improvement Initiative
- Training
- Maternal and child health
- Family planning and reproductive health
- Provincial expansion
- Community outreach
- Job aids to support quality
- Infrastructure development.

A. *The Quality Improvement Initiative*

Results achieved

Reforço made substantial and measurable progress in improving quality of care in four Luanda health centers and contributed significantly to longer term strategies for the Ministry of Health (MoH). Using 79 quality criteria adapted from "Proquali" in Brazil,[5] the four participating centers raised compliance from 21 percent in March 2004 to 67 percent in June 2005.[6] Compliance increased in all eight technical areas, as follows, over the 15 month period:

- Service organization: improved from 12 percent compliance to 69 percent
- Environment: from 18 to 54 percent
- Infection prevention: 28 to 72 percent
- Prenatal consultations: 30 to 75 percent
- Labor and delivery: 18 to 73 percent

[5] Proquali was a joint endeavor of Management Sciences for Health, the Johns Hopkins University Center for Communications Programs, and JHPIEGO.

- Postpartum, family planning, and STI consultations: 9 to 78 percent
- Infant and child health: 33 to 58 percent
- Immunizations: 25 to 50 percent.

Improvements were most dramatic in areas which were particularly weak at the baseline. "Postpartum, family planning and STI consultations," for example, improved from 9 percent compliance to 78 percent; while service organization moved from 12 percent to 69 percent. On the other hand, two of the stronger areas at baseline (infant health and vaccinations) ended up among the weakest. Table 2 provides additional detail.

Table 2: Compliance with quality standards at Reforço health centers

Area	Number of criteria	Baseline March/April 2004	August 2004	February 2005	July 2005
Service Organization	12	12%	27%	56%	69%
Environment	14	18%	37%	73%	54%
Infection Prevention	9	28%	44%	47%	72%
Prenatal consult	11	30%	36%	43%	75%
Labor and delivery	14	18%	34%	72%	73%
Postpartum, Family Planning, and STI consultations	8	9%	59%	81%	78%
Infant Health	6	33%	50%	50%	58%
Vaccination	5	25%	65%	50%	50%
TOTAL	**79**	**21%**	**41%**	**56%**	**67%**

Behind these statistical results lay many individual improvements, as detailed in Table 3.

Reforço helped the **Viana II** center introduce new family planning services, which are now serving around 200 women per week; through this program, women have access to a range of modern methods, including IUDs. The maternity now has a continuous supply of materials and drugs. The center has initiated post-partum services, with assistance from Reforço and the MoH, and has integrated maternal services (prenatal care, family planning and reproductive health) by sharing personnel and physical space. Viana II has also instituted radio communications with the ambulance for emergency referrals. The center's Quality Committee has worked to re-organize child health and diarrhea consultation areas for increased efficiency. CAPEL and Reforço conducted several on-the-job trainings in childhood illness.

The Quality Committee at the **Cacuaco** health center was particularly effective in improving prenatal service quality. Consultations were previously held in one room, which impeded client flow and didn't allow for privacy; the center now uses three rooms. Rooms for family planning services and child health were re-organized to improve efficiency. Despite having one of the largest maternities in the area and adequate staffing, Cacuaco advanced significantly against the QI indicators, particularly in the areas of immunization, prenatal care, and infection prevention.

Table 3. Improvements identified in Reforço-supported clinics

- Clinics increased client privacy, with closed doors or screens for consultation.
- Staff maintained sanitary conditions and correctly disposed of contaminated materials.
- Consultation rooms were cleaned and better organized.
- Staff maintained consistent supplies of necessary materials and equipment.
- Decontamination of instruments and materials in chlorine solution 0.5%
- Washing hands before and after each procedure; use of gloves by cleaning personnel
- Use of decontaminated plastic sheets on post-partum beds and delivery tables
- Health centers used new prenatal materials and adhered to service procedures.
- Staff instructed clients on the importance of prenatal care and a childbirth plan.
- Facilities registered staff responsible for prenatal services; also recorded client education sessions.
- Staff correctly conducted physical and obstetric exams during prenatal consultations, including inspection of the perineum for marks and abnormal inflammation, hemorrhages, vaginal ulcers.
- Health staff conducted in-take of pregnant women, verifying dilation and contraction.
- Staff explained to women what to expect during birth and solicited questions.
- Staff also consulted the birth-plan card of pregnant women.
- Clinics assured sanitary conditions during birth, including sterile birth instruments and syringes with 10 units of oxytocin.
- Presence of a partner or friend during the examination, as appropriate
- Correct use of symptom criteria for identifying STIs
- Correct explanation of advantages and disadvantages of selected methods, and proper client education on STIs.
- Courtesy to mothers and infants during consultations
- Proper triage of infant health problems, with referrals as necessary
- Verification of vaccination schedules and information to mothers on upcoming vaccination dates
- Directly observed administration of first doses of necessary medication
- Introduction of IMCI algorithms, including integrated treatment for diarrhea and malnutrition
- Improved diagnostics and treatments for fever, particularly acute respiratory infection and malaria
- Improved overall management and organization of pediatric services.
- Appropriate handling of vaccines, correct administration and logging on vaccination cards
- Dispensing of BCG to newborns to prevent tuberculosis.

In addition to the above, evaluators noted several cross-cutting improvements:

- Interpersonal communication demonstrated by health center staff
- Production of training materials and IEC to reinforce improved practices
- Increased privacy during consultations
- Improved use of service delivery space
- Development of a family planning service model
- Community promotion of FP/RH services.
- Integration of maternal and reproductive health services
- Consistent use of mosquito nets in prenatal and post-partum service rooms
- Improved service delivery rooms: construction and rehabilitation of physical structures at target health centers and equipment renovation.

The Luanda Directorate of Public Health (DPSL) has adopted the QI method as its preferred service delivery approach, and has continued to implement it since Reforço ended. As of December 2005, eleven additional clinics were practicing QI, with fourteen more scheduled to begin in January 2006.

Activities implemented

The 2002 service delivery assessment revealed a critical need for service improvements throughout the Luanda health care system. Problems identified touched on management, pharmaceutical supply systems, and direct service delivery, indicating overall non-compliance with existing MCH norms and guidelines.

- Health centers were poorly designed and maintained
- Clients had little privacy
- Norms and standards were generally unknown and disregarded
- Common diseases were often misdiagnosed and incorrectly treated
- Health centers kept few client records and even these were incomplete and unsystematic
- The few available service statistics were not used for decision-making.

Assessments showed that the most important issues in service delivery were improper service organization, lack of focus on the client, and an overall poor quality of care. They highlighted an urgent need to increase the quality of MCH services *before increasing demand*. In addition, health personnel and mothers displayed a lack of information about how to treat childhood illnesses.

Reforço presented the Service Delivery Assessment (SDA) results to service providers in a one-day workshop in January 2003. Workshop participants gave highest priority to **improving service quality**, followed by **organization of services**; specifically, improvements in:

- Adherence to MoH norms and guidelines
- Overall management capacity, through systematic data gathering and work planning

- Reorganized service space to facilitate privacy and efficiency
- Physical structures
- Hygiene
- Reproductive health services, especially for youth
- Lab organization, support and equipment
- Availability of essential drugs and medical supplies
- Referral and counter-referral systems.

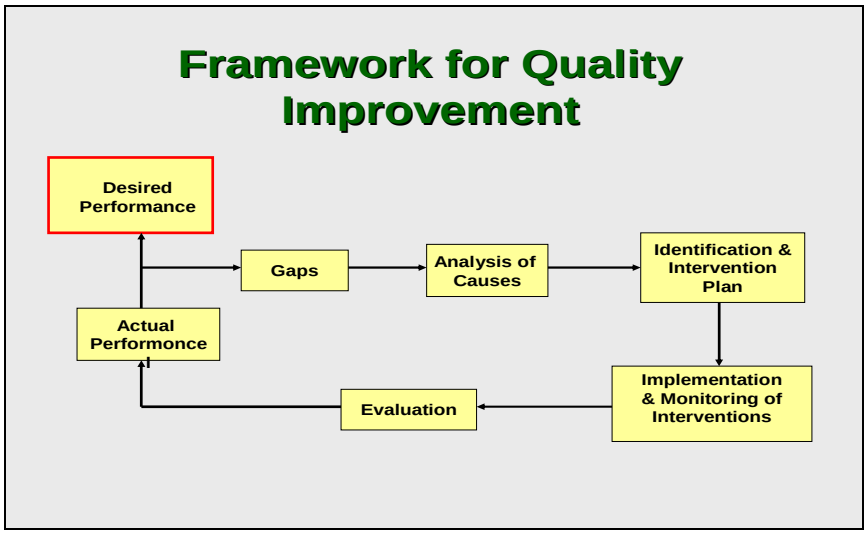
The QI Initiative began with an exploratory phase in February 2003 and the formal introduction of the QI model a year later. Implementation ended in June 2005.

Quality Improvement Methodology

The project drew on and adapted a quality improvement methodology developed by MSH, JHPIEGO and JHUCCP in Brazil ("Proquali"). (See Figure 1 below as well as "Instrumento de Auto – Aprendizagem para Melhoria da Qualidade"). This approach assumes that anyone in an organization can make valuable contributions to improve operations. It centers on continuous operations improvements instead of abrupt change, recognizing that many organizational problems result from systems and processes, rather than from individuals. Key to successful implementation lies in building a participatory team, focusing on needs and priorities defined by the users of health services. Essential ingredients include:

- Leadership commitment and support for quality
- Responsiveness to client needs and feedback
- Use of problem solving tools
- Respect for staff abilities and individual contributions
- Reliance on quantitative data: clear objectives, honest self-assessment, and data-based decision making.

Figure 3: Reforço's framework for quality improvement of health services



Reforço's QI approach included:

- **A QI Training Plan**. Reforço provided QI training for managers, Quality Committees, and service providers. This training broadly addressed the meaning of organizational change, and the need to look at the functioning of the health center as a whole to improve service quality. Further trainings dealt with specific MCH technical areas, all framed in terms of the QI approach.
- **The QI Tool**. The QI tool contains comprehensive criteria for improving MCH services, spanning management issues, health facility environment, and technical components of service delivery. The tool simultaneously serves as a supervisory aid by providing health staff and supervisors with the same information about quality service standards.
- **Action Plans for Health Units**. Working with Quality Committees in each health center, the project developed detailed action plans to address existing quality and service organization problems. Committees measured progress and adjusted action plans against service criteria in the QI tool.
- **MoH sensitization, advocacy, and organization**. MOH staff participated in the QI initiative, and in some cases led the process.

Quality Committees use QI tools to sustain service improvements

Reforço formed Quality Committees of managers and service providers at participating health units, initiating the process through workshops to introduce the tool and train facilitators. Through group work and interactive sessions, participants discussed both theoretical and practical aspects of quality.

Quality Committees prioritized activities and organized specific actions to improve client-oriented services. Reforço offered training to analyze current performance and define objectives. Participants learned to focus on key problems and root causes, to design and implement interventions, and to evaluate results. Reforço's QI criteria became a part of the MoH's official supervisory criteria in 2004.

The QI tool helped providers understand what steps are necessary to achieve high-quality services for clients. Most importantly, the tool segments large or ambiguous service delivery concepts into smaller parts with concrete, operational instructions about how to improve services. For example, within the Management Block, the area of Service Organization contains 12 criteria, namely:

1. Inform the Clients
2. Identify problems/solutions & actions
3. Have an unique and well organized clinical file (archive)
4. Have basic service routines/norms for the delivery of each service
5. Have job description for health workers
6. Optimize time of client in the clinic
7. Registering/consolidating statistical data

8. Data analysis to support decision making
9. Evaluation of clients satisfaction
10. Have a system for appointments
11. Assure complete attention of the client
12. Distribute appropriate medicaments

Ability to "inform the clients" requires in turn:

- A placard indicating ALL services available in the unit
- The costs of each services are clearly and visibly specified
- All services are appropriately and clearly identified
- Existence of signs to guide patients to the services they seek
- Existence of a centralized system to collect service fees.

Under the "improved environment" category, moreover, staff find the steps necessary for compliance, including a comfortable waiting room, adequate ventilation, good lighting, adequate furniture, materials and privacy to do consultations. The tool also introduced the concept of self-monitoring among providers, making them aware of how they would be judged by provincial supervisors.

Lessons learned

Conventional approaches to strengthening primary health care (PHC) services may inject greater resources into the service delivery systems, while neglecting management of human and material resources. As a result, providers often fail to apply new knowledge attained through training, or quickly abandon new techniques. Valuable equipment is not maintained, and client needs become the last priority. The Angola experience indicates that to sustain quality improvements in health services, we need to a) change provider behavior, b) organize services around client needs, and c) focus on continuous performance improvement.

The project was successful in demonstrating the benefits of continuous quality improvement (CQI) to providers, supervisors, policymakers, and clients. The CQI process demands a high level of personal responsibility, and all involved must believe that the extra work does indeed pay off: providers must take extra time to explain services to clients, supervisors must give specific directions to their staff and be accountable for evaluation procedures; and clients must be personally responsible for preventive measures and not just concentrate on their immediate physical state without regard to the behaviors that caused it.

Two main concerns present themselves when considering the future of the QI initiative: First, given the relatively short period of intervention, the sustainability of the results can not yet be assured. Sustainability, moreover, depends heavily on the capacity of the MoH to continue the changes along with the willingness of donors to provide funding.

Remaining challenges in the QI process include:

- **Selection of service indicators to structure QI work.** Ideally Quality Committees in each center will select appropriate statistics (like immunization coverage rates) to set goals and measure progress in service delivery.
- **Improved coordination with the MoH about necessary medical equipment and supplies.** The MoH must demonstrate its commitment to the QI process through timely provision of requisite materials.
- **Improved communication between providers to achieve integrated care.** It is important that providers share experiences and continue to be willing to work together on service tasks that previously occurred in isolation.
- **Standard routines reflecting compliance with QI standards.** Reforço staff worked with providers and national MoH representatives to compile descriptions of routine activities reflecting best practices in service delivery. This was an empowering exercise for providers, and support from the MoH ensured credibility. However, providers are still challenged to make good service delivery practices a permanent part of their daily activities.

B. *Training*

Reforço offered both formal classroom training and on-the-job support (OJT), reinforced through supervision. In Luanda alone, Reforço and two MoH units trained 491 persons in classroom settings between October 2002 and June 2005. During OJT, Reforço facilitators worked alongside providers as they interacted with clients and treated illness, reinforcing the techniques learned through formal trainings.

Results achieved

Table 4 summarizes formal training activities between October 2002 and June 2005:

Table 4. Training Activities October 2002 – June 2005

Type of training	Number of Participants	Type of personnel
Prenatal Care	69	SDP Midwives
Malaria for Nurses in Prenatal Care	15	Nurses and Midwives
Reproductive Health and STI	25	SDP Service Providers
IMCI Global	123	SDP Providers
Infant Health	106	SDP Service Providers
Malaria for Laboratory Technicians	15	Laboratory Technicians
Growth Monitoring & DD	25	SDP Service Providers
Essential Obstetrics Techniques	7	Nurses and Midwives
IEC and Community Mobilization	26	SDP Service Providers
Orientation for QI techniques 1st phase	47	QC, Provincial & National MOH Officers
Service Mobilization	15	Youth Mobilizers
Orientation for QI techniques 2nd phase	25	QC, Provincial Officers
Training of Trainers	18	Provincial Officers
Infection Prevention		Cleaning Staff and Providers
Total	**491**	

On-the-job trainings were conducted consistently from 2003-2005. With approximately 600 providers in Reforço's target centers, the project reached nearly all of them each quarter by rotating through service areas at each of the centers. Table 5 is an illustrative example of the number and type of in-service trainings conducted each quarter during the project's full implementation, including the number of providers that participated in each.

Table 5. Total in-service training sessions and participating health workers by service: April–June 2005

Service/Topic	Sessions	Health Workers
Prenatal	**13**	**49**
Deliveries	**10**	**38**
Postnatal	**7**	**35**
RH/FP	**26**	**124**
Pediatrics	**26**	**118**
Growth Monitoring	**7**	**25**
Immunization	**7**	**40**
Organization Services	**12**	**81**
Infection Prevention	**6**	**56**
Total	**152**	**668**

In the project's first year, 53 provincial supervisors received on-the-job training in IMCI; 25 health providers were trained in growth monitoring, diarrheal disease control, malaria, ARI, EPI, and nutrition; and another 25 were trained in reproductive health and STIs. As detailed in the section on demand creation, some training also addressed behavior change communication and community mobilization. Those trained included nurses and midwives, other service providers, supervisors, lab technicians, and provincial and national MoH officials.

Activities Implemented

In December 2002 and January 2003, project staff and the Provincial Directorate of Health for Luanda (DPSL) conducted a training needs assessment to determine the most pressing skill deficiencies in the target areas. Most of those surveyed had already achieved a certain level of clinical proficiency but lacked specialized skills in reproductive health. Results led DPSL and Reforço to prioritize training in safe motherhood, child survival, STIs, and HIV/AIDS.

To reinforce service delivery protocols taught in formal training, project staff made daily visits to health centers to observe service delivery practices. With a focus on interpersonal communication and proper technical procedures, these in-service training sessions were organized by service area and usually lasted through an entire workday at a

given health center. Working in small groups with Reforço staff, providers received immediate feedback on their skills and techniques based on real interactions with clients.

Basic skills were extremely weak in Bié and Kwanza Sul, the two expansion provinces. In the first, a significant proportion of current staff were demobilized UNITA troops some of whom had apparently received some medical training. In Kwanza Sul, many health workers had limited or no formal training, and in both provinces even basic literacy skills were low. The large number of clinic staff hoping to receive government employment and training presented additional challenges.

Building training capacity

Seeking to build sustainable training capacity, Reforço channeled formal training for Luanda through two established MoH units, both previously supported by the Swedish International Development Agency (SIDA):

- Coordenação das Actividades Obstétricas de Luanda (CAOL)
- Coordenação das Actividades Pediátricas de Luanda (CAPEL)

Both had a significant presence in the project's three municipalities. CAOL in particular had installed small maternity facilities in all four Reforço-supported health centers, and had developed obstetric protocols and standards that shaped MCH interventions. CAOL also contributed supplies and helped produce IEC materials; and it supervised newly trained staff to reinforce new skills.

The Project held its first Training of Trainers (TOT) workshop in Luanda in March 2004. Eighteen participants included health officers from Kwanza Sul, Huambo, Bié, Lubango, Malanje, as well as representatives from CAPEL, CAOL, DNSP, and the *Instituto Meio de Saúde*. A one week TOT was also conducted in Sumbe (Kwanza Sul), to develop training capacities in the two provinces covered by the project. Twenty-seven participants attended: 11 from Bié and 16 from Kwanza Sul.

C. *Maternal and child health*

With a total fertility rate of 6.8, maternal and child mortality rates in Angola are among the highest in the world. Maternal mortality is over 1,300 deaths per 100,000 live births, while infant mortality is estimated to be 145 per 1,000.

Results achieved

Reforço activities impacted several important reproductive health variables:

- The proportion of pregnant women receiving at least four prenatal care visits increased by 18.6 percent (from 54.4 to 64.5 percent).
- The proportion of pregnant women receiving two doses of tetanus toxoid increased by 42.3 percent (from 66.5 to 94.6 percent).

- The proportion of deliveries occurring at health units, with trained professionals rose by 31.2 percent increase (from 55.7 to 73.1 percent).
- The proportion of pregnant women receiving Vitamin A increased by 26.4 percent (from 48.9 to 61.8 percent).
- The proportion of recently delivered women receiving complete postnatal care increased by 15.9 percent (from 33.9 to 39.3 percent).

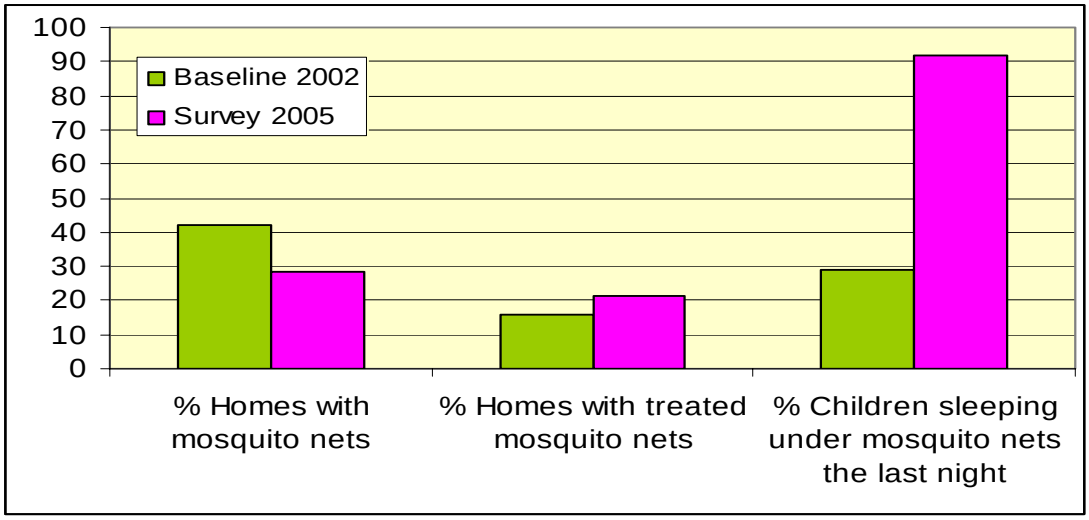
The survey results indicate that Reforço affected household preventive practices and these in turn *may* have contributed to reduced incidence of ARI, diarrhea and malaria. In any case, the proportion of sick children receiving appropriate treatment clearly rose. Table 6 summarizes these data.

Table 6: Selected Health Indicators Infant Health and Malaria—Baseline Survey December 2002 and End-of-Project Survey June 2005

Disease prevention			
% Homes with mosquito nets	42.0	38.4	-8.5%
% Home with treated mosquito nets	16.1	21.2	31.6%
% Children sleeping under mosquito nets	28.7	91.7	219.5%
% Children under exclusive breastfeeding, first 6 mos.	20.4	28.7	40.7%
% Children under 1 year who are fully immunized	27.5	29.8	8.4%
% Children 12-23 months fully immunized vacc. card	22.8	24.9	9.2%
% Children 12-23 months fully immunized mother & card	38.5	40.8	6.0%
Disease incidence			
% Children < 5 years old with ARI in last 2 weeks	20.8	17.1	-17.8%
% Children < 5 years old with diarrhea in last 2 weeks	17.7	10.6	-40.1%
% Children < 5 years old with malaria in last 2 weeks	25.8	17.6	-31.8%
Disease treatment			
% Mothers knowing 2 signs for treatment of ARI	63.7	68.2	7.1%
% Mothers knowing 2 signs for treatment of child illness	33.8	39.3	16.3%
% Children < 5 years old with ARI treated with Antibiotics	15.1	20.5	35.8%
% Children < 5 years old with diarrhea treated with ORT	25.0	35.6	42.4%
% Children < 5 years old with malaria timely treated	48	52.3	6.9%

While the proportion of homes with mosquito nets fell between 2002 and 2005 (a failure of the public health distribution system), the proportion with treated nets rose and – most importantly – the proportion of children sleeping under nets (in homes having nets) increased more than threefold. This means that preventive behavior to protect children from malaria was present in almost all the homes where this was possible. UNICEF and NMCP educational campaigns certainly contributed to this change, but Reforço community outreach probably did so as well.

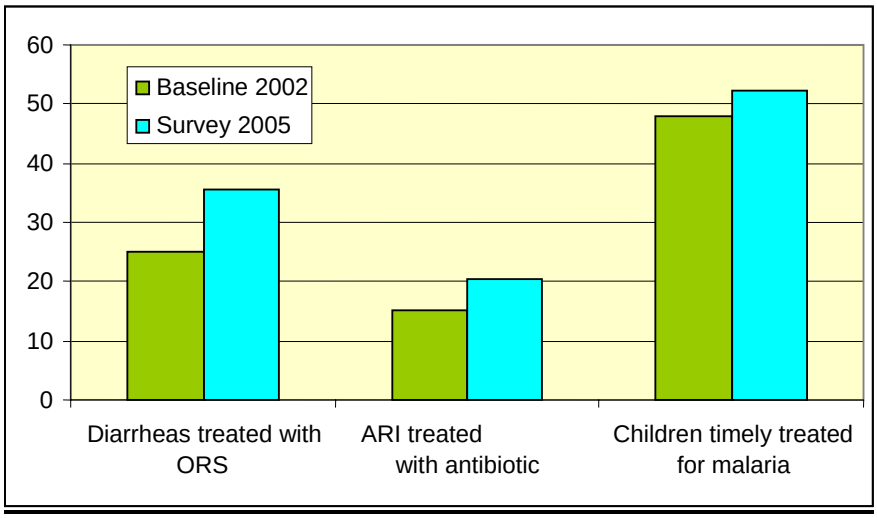
Figure 4: Proportion of Homes with Treated and Non treated Mosquito nets and Children sleeping under mosquito nets the previous night—Baseline Survey December 2002 and End-of-Project Survey June 2005



Progress in child immunization, on the other hand, was quite modest, in part because the Ministry emphasized public campaigns rather than strengthening of clinic services. Data confirmed through vaccination cards indicate that the proportion of children 12 to 23 months fully immunized increased from 23 to 25 percent in 2005. Mothers' reports suggest higher coverage but even less improvement (39 to 41 percent). The only area where the project may have had some impact was the moderate increase in BCG coverage that was accompanied by improvement of maternity services and the vaccination of newborns, increasing by 10 percent from 33 percent in 2002 to just over 39 percent in 2005.

Another indicator of progress in child health is the improvement in treatment of child illness, as shown in Table 6 and Figure 5. While in 2002, only 15.1 percent of children with an ARI were treated with antibiotics (when needed), 20.5 percent received this treatment in 2005. The proportion of diarrhea cases treated with oral rehydration salts (ORS) rose from 25.0 to 35.6 percent, a net increase of 42 percent. Although something similar happened in the case of malaria treatment, the improvement was less significant: only 6.9 percent more malaria cases were treated in a timely and appropriate manner in 2005 than in 2002.

Figure 5: Percentage of Children < 5 Appropriately Treated for Diarrhea, ARI and Malaria—Baseline Survey December 2002 and End-of--Project Survey June 2005



As discussed in the demand section below, this overall improvement in child health is reinforced by other indicators associated with knowledge about signs of need of treatment in the case of child health and, more specifically, in the case of ARI management.

Activities implemented

Reforço supported implementation of Roll Back Malaria (RBM), a WHO-sponsored global initiative, and in particular achievement of the Abuja target that "60 percent of pregnant women at risk of malaria will have access to intermittent preventive treatment by 2005." Given its maternal and child health focus, Reforço concentrated on malaria in pregnancy, one of the disease's most dangerous phases, as well as incorporation of standard treatment guidelines into algorithms for Integrated Management of Childhood Illness (IMCI).

The WHO Africa Regional office recommends a three-pronged strategy for controlling malaria in pregnancy:

- **Intermittent Preventive** (or presumptive) **Treatment**—Sulfadoxine-pyrimethamine (SP, or Fansidar), administered twice during first and second pregnancies, once after quickening and again early in the third trimester.
- **Insecticide Treated Nets—**Routine use of treated nets by pregnant women and their infants.
- **Case Management—** Immediate treatment, focusing on complete cure; use of diagnostic microscopy wherever feasible.

Reforço aimed to:

- Improve prenatal care services, emphasizing prevention and treatment of malaria during pregnancy
- Identify child birth risks and facilitate appropriate referrals, in part through integration of trained birth attendants (TBAs) into the formal health system (especially in the provinces)
- Strengthen malaria prevention and treatment through Integrated Management of Childhood Illnesses (IMCI)
- Promote postpartum care immediately after delivery, one week later, and over the first semester
- Improve management and treatment of fever in children under five, including appropriate diagnosis of malaria and ARI
- Improve management and treatment of diarrhea and prevention of malnutrition
- Promote growth monitoring
- Develop appropriate conditions for routine vaccination services at health facilities, accompanied by outreach activities.

Reforço began working with the Luanda Provincial Health Directorate (DPSL) to integrate malaria treatment and prevention into overall service strengthening at all project sites. Cacuaco was selected to field test modified norms for IPT, partly because its catchment area included a UNICEF-supported bednet re-treatment center and a Cuban-supported larvicide application effort. At the urging of WHO, it was also agreed that laboratory diagnostic services at Cacuaco would be improved through training of staff, introduction of rapid tests, and provision of microscopes.

The project trained nurses and midwives in symptoms, prevention and treatment of malaria. Trained staff introduced prenatal screening using rapid malaria tests donated by WHO. Reforço supported additional training for lab technicians in malaria diagnostics. It also worked with Cacuaco staff to improve record-keeping on malaria incidence and treatment in pregnant women. All pregnant women testing positive were treated and provided with insecticide treated bed nets.

Based on technical review in April 2004, DPSL asked Reforço to expand its Cacuaco initiative to other health centers, relying heavily on prenatal consultations as an opportunity for screening, treatment and follow up. The project trained providers to recognize malaria symptoms and designed a curriculum for counseling women about malaria and pregnancy. Reforço worked to ensure that women who presented malaria symptoms at the prenatal visit were given a rapid malaria test; positive rapid tests were sent to the laboratory for a microscopic test.

Reforço introduced training that was innovative in several areas in the Angolan context, including:

- **Prenatal care.** Introduced complete physical exams as a central element. Providers learned how to communicate the importance of institutional delivery, and used consultations as an opportunity to alert women to family planning.
- **Interaction with clients.** The project trained providers in verbal and non-verbal communication, language, and barriers to communication.
- **Deliveries and Postpartum Care.** Reforço staff trained providers in high risk obstetrics and essential obstetric techniques; providers were also trained in integration of infant care services with these postpartum visits, emphasizing immunizations.
- **Birth registry system.** In collaboration with the MoH and Swedish International Development Agency (SIDA), Reforço conducted on-the-job training for 62 providers to improve the birth registry system in the target areas. The registry system was reorganized in all targeted centers to ensure consistent numerical order for the birth register as well as regular use of the *partogram*.
- **Child health care.** Reforço conducted on-the-job training for pediatric providers to improve growth monitoring, diarrhea, nutrition and EPI services. A total of 21 IMCI algorithms and child classification forms were reproduced and distributed to targeted health centers. Providers focused on communicating with mothers about routine immunizations as well as on monitoring of infant health cards.

Lessons learned

Behind the agreement to improve malaria control during pregnancy lay a variety of assumptions outside Reforço's control. One was that the MoH would approve changes in national norms to allow use of SP for prevention of malaria in pregnancy, or at least authorization to allow the test site to use it pending changes to the norms. The second assumption was that SP would be fully available for the roughly 7,000 pregnant women seen annually by the Cacuaco Health Center. The third assumption was that insecticide-treated bed nets would also be available, along with capacity to re-treat nets every six months. In fact, none of these assumptions proved fully valid, significantly delaying and complicating implementation.

It is worth noting that at project startup, national norms called for use of chloroquine (CQ) rather than SP for both IPT and case management. The National Malaria Control Program (NMCP) had endorsed a switchover to SP, but the MoH had delayed in validating this change.

D. *Family planning and reproductive health*

Though there is significant unmet demand for family planning services in Angola, the pace of increase in use is slow and largely driven by commercial markets. In general, the

majority of Angolan women and men have not benefited from modern contraceptive technology long available elsewhere.

Reforço aimed to:

- Increase availability of family planning and other reproductive health services.
- Promote postpartum care immediately after delivery, one week later, and over the first semester
- Establish post abortion care (PAC) services within Luanda.

Results achieved

Reforço impacted several important reproductive health variables, notably:

- The proportion of pregnant women receiving at least four prenatal care visits increased by 18.6 percent (from 54.4 to 64.5 percent).
- The proportion of pregnant women receiving two doses of tetanus toxoid improved by 42.3 percent (from 66.5 to 94.6 percent).
- The proportion of deliveries at health units, with trained professionals increased by 31.2 percent (from 55.7 to 73.1 percent).
- The proportion of pregnant women receiving Vitamin A rose by 26.4 percent increase (from 48.9 to 61.8 percent).
- The proportion of recently delivered women receiving complete postnatal care increased by 15.9 percent (from 33.9 to 39.3 percent).
- The modern method contraceptive prevalence rate increased by 51.7 percent (from 17.4 to 26.4 percent).
- The proportion of recently delivered women initiating contraception in the postpartum period increased by 45.9 percent (from 17.2 to 25.1 percent).
- The proportion of women wanting another child within a year *decreased* by 23.6 percent (from 25.9 to 19.8 percent).

Activities implemented

Implementation activities included:

- Strengthening of counseling techniques
- Maximizing the use of available contraceptives
- Integrating family planning with other maternal health services, particularly prenatal and postpartum care
- Increasing knowledge of providers on reproductive health and particularly family planning.

The project also increased the number and range of contraceptives available, including IUDs.

Reforço successfully mobilized and incorporated support from both Advance Africa and Pathfinder. Advance conducted a mapping exercise in June 2003 to measure the

availability of modern contraceptives, to identify barriers to their effective use, and to develop a plan for information and education. Reforço used findings to develop information materials for the DPSL.

Pathfinder International contributed $400,000 in private funds to help the project initiate family planning services in the four Luanda health centers, complemented by community-based services through several NGOs. Reforço staff worked with health providers to institute gynecological examinations, STI testing, and IEC. In addition, Reforço and the MoH introduced a family planning registry system with a mobile file to monitor service statistics. Provider training reinforced proper provision of family planning services and counseling.

Under updated national Norms and Standards for reproductive health and family planning, the MoH acknowledged that unsafe abortions are a significant cause of maternal mortality. The MoH decided to promote life-saving post-abortion care (PAC) to address complications due to unsafe abortions and to offer contraceptives to prevent repeat abortions.

Reforço collaborated with Pathfinder to introduce PAC within Luanda. In consultation with the DPSL, the Hospital Cajueiros was selected as a reference center, and an underused section of the maternity ward renovated and equipped. Pathfinder sent six MoH staff to Lima for two-week's intensive training, including extensive practical experience and a thorough overview of PAC systems. Trainees then set up services in the Hospital Cajueiros. Pathfinder's PAC curriculum was translated into Portuguese, and the MoH is currently reviewing it in order to approve its use throughout Angola.

As described in the section on demand, Reforço also supported youth outreach in collaboration with Pathfinder and Agi Jovem.

Lessons learned

Because family planning services are relatively new in the target area, significant challenges remain. The level of skill health providers demonstrate in detection and treatment of STIs is still quite low. Project staff also found that supply of contraceptive methods does not correspond to the actual needs of each health unit; for example, monthly demand for Depo-Provera vials at the Hoji ya Henda center can reach 6,000, but the center usually receives only 200-300 injections. Reforço specialists also encountered provider resistance to family planning counseling, but they have worked to improve tolerance and encourage providers to see its importance.

E*. Provincial expansion*

Results achieved

At the request of USAID and with a desire to reach the underserved population in the Angolan provinces most damaged by the war, the Reforço project began expanding

project activities to two additional provinces: Kwanza Sul and Bié in May 2003. The intermediate results the project hoped to achieve through this expansion were:

a) Strengthen the delivery of primary maternal and child health services in selected municipalities as a basis for future scale up
b) Promote community involvement
c) Reinforce overall management and planning capacity of the provincial and municipal health teams
d) Develop a model for local health system strengthening that could be replicated in other municipalities.

Reforço and its MoH colleagues learned a great deal about the practical aspects of PVO-MoH partnerships in rural areas but otherwise fell short of the above objectives.

Activities implemented

Given the operational capacity and experience of PVOs working in the provinces, and the importance of linking their efforts with those of the Ministry of Health, Reforço committed to implementing the provincial expansion in partnership with PVOs. Reforço accordingly expanded its existing agreement with Save the Children-US (SCF) for work in Kwanza Sul, and initiated an agreement with CARE for work in Bié.

Much of the health infrastructure of these provinces was targeted during the war; and existing structures were often without roofs, doors and windows. These needed to be replaced to provide the minimum circumstances within which to begin seeing patients and to provide security for medical equipment.

Remaining health facilities were staffed with personnel that had received limited, and in some cases no, formal training in diagnosing and treating the diseases which are the major causes of morbidity and mortality among women and children. Combined with the limited supply of essential drugs, this situation resulted in limited demand and underutilization of health services.

Staffing challenges differed between Kwanza Sul and Bié. Literacy levels in Kwanza Sul were low; training would preferably be hands-on competency based training. In Bié, on the other hand, many clinic staff were demobilized UNITA troops and some had received some medical training.

Lack of essential drugs was also a serious problem, especially since the MoH had largely been operating with donor supplied prepackaged drug kits.

The channeling of emergency and post-conflict relief efforts through the PVOs had allowed them to develop field staff with some experience coordinating with the MoH, logistics capability to support this staff, and administrative capability to manage and

account for funds. A number of PVOs had also been organized into a consortium to receive PL480 food and funds as part of USAID's food security program or were working collaboratively within the context of polio eradication and malaria prevention.

A full account of Reforço's provincial expansion activities, including extensive "lessons learned," appears in Annex 2 of this report.

Lessons learned

At the time of Reforço's startup effort, provincial and municipal health teams existed more in theory than in practice. Though efforts were made to do joint planning, share plans and conduct joint visits, it proved very difficult to get the designated MoH counterparts to accompany the process.

The MoH was able to provide staff salaries and essential drug kits in the provinces. Other resources are contained in budgets controlled by the provincial governors, but are at the governor's discretion. There was also contradictory legislation defining how public health was to be structured and administered at provincial and municipal levels. Thus provincial or municipal managers could enter into good faith agreements with projects or PVOs, but had little control over their ability to comply.

In the post conflict environment, the provincial priority was for facility repair and construction. The decision about what to repair or construct often responded to the desires of individual administrators, rather than to any public health or demographic criteria. Funding for staffing these facilities once constructed didn't appear to be part of the calculation.

Provinces acted independently rather than in response to national health priorities. The national level had limited information about or communication with provinces. The provincial budget for health was defined and disbursed by the governor; it thus responded more to local political imperatives than to national public health programs, policies or priorities. The legal basis for the public health structure at the municipal level was in dispute since contradictory legislation exists.

Provincial and municipal staffing resources were extremely limited, preventing meaningful managerial and supervisory roles. Annual plans were prepared without knowledge of available budgets or how they might be carried out. Service providers generally had limited formal training and received limited, if any, supervision from the municipality. Short-term classroom training was unlikely to modify provider behavior sufficiently to ensure appropriate clinical case management. Women's participation was inadequate. Given cultural norms, the ability to increase the number of women participating in maternal and reproductive health programs will be contingent on the MoH's ability to increase the number of female technical staff.

Pending dramatic changes in available resources and concurrent planning, financial, supervisory, managerial and monitoring skills, there is little expectation that the provincial or municipal level will have the capacity by themselves to scale up this experience. It had been the project's assumption that once the provincial expansion was underway, there would be opportunities to incorporate additional PVOs into the process at the provincial level. Unfortunately, during the period that this initiative was being implemented, there was a dramatic reduction in the number of potential PVO partners at the provincial level; the reduction in post-conflict aid and food aid has caused international PVOs to leave a number of provinces, eliminating them as potential partners.

Despite the limitations and constraints identified above, there continues to be a considerable amount of interest in having PVOs support national strategies at the provincial level. The following is an attempt to identify roles PVOs might play in helping provincial staff respond to the demands these national strategies will place on them, and what technical and managerial skills they would need to bring to the task:

Technical

- Assist the Provincial Public Health Director and relevant section chiefs to increase their technical knowledge and capabilities related to integrated reproductive health, integrated care of childhood illness (IMCI), and endemic diseases (malaria, HIV/SIDA, STI, TB).
- Assist in strengthening provincial and municipal capacity to train health center and post staff in clinical and administrative skills for reproductive health, IMCI and malaria through the formation of a nucleus of provincial trainers (*nucleos de formadores provinciais*).
- Assist provincial and municipal trainers to carry out the training of target health center and health post staff.
- Assist provincial and municipal trainers to carry out follow-up supervisory visits.
- Assist provincial and municipal supervisors to develop and implement a monitoring and evaluation system based on clinical case management indicators.

Managerial

- Assist counterparts to review annual municipal and provincial plans to identify activities which relate to the national Strategic Plan for Accelerated Reduction of Maternal and Infant Mortality (2004-2008) and the National Strategic Plan for the Control of Malaria in Angola (2005-2009).
- Reinforce monitoring, evaluation and reporting.
- Assist in the dissemination and application of national managerial and administrative norms.

F. *Community behavior change*

Results achieved

Table 5 presented above included a number of indicators of project impact at the community level. In particular:

- Appropriate use of bednets, in homes having nets, increased three-fold, from 28.7 to 91.7 percent.
- The proportion of children under six months exclusively breastfed rose from 20.4 to 28.7 percent.
- The incidence of all three child killer diseases (malaria, ARI, diarrhea) declined between December 2002 and June 2005 (an effect partly confounded by seasonality factors).
- The proportion of mothers knowing two signs for treatment of ARI rose from 63.7 to 68.2 percent.
- The proportion of mothers knowing two signs for treatment of child illness also rose, from 33.8 to 39.3 percent.

As noted earlier, while the proportion of homes with mosquito nets fell between 2002 and 2005, the proportion with treated nets rose and – most importantly – the proportion of children sleeping under nets (in homes having nets) increased more than threefold. This means that preventive behavior to protect children from malaria was present in almost all the homes where this was possible. UNICEF and NMCP educational campaigns certainly contributed to this change, but Reforço community outreach probably did so as well.

Activities implemented

With USAID and MoH agreement, the decision was made in early 2003 to concentrate on quality and access in Luanda, rather than on generating new demand for already inadequate clinical services. The strategy, rather, was to encourage better understanding of health factors at the household and communities levels, especially as they related to maternal health and prevention of malaria. Reforço focused on community outreach more than mass media; the former was more likely to change behavior but also to ensure appropriate and timely treatment when required.

At the community level, Reforço and Cacuaco providers promoted the use of insecticide-treated bednets donated by WHO and UNICEF. The project conducted thirteen meetings of community members, neighborhood leaders, and representatives from the municipal government to promote the Roll Back Malaria initiative, and distributed malaria information to 47,000 local citizens. The project trained youth activists from Agi-Jovem to visit homes and encourage proper treatment for women testing positive during prenatal consultations. Representatives made 2,713 home visits, in part to measure re-infection levels, verify the correct use of mosquito nets, check the health status of young children. They also emphasized the importance of a mother's follow-up prenatal visit, and gave

other appropriate health information. Reforço also trained 26 service providers in IEC and community mobilization and prepared educational materials. (See Table 3.)

Lessons learned

The project clearly demonstrated the potential contribution of community based strategies to complement facility work. These were implemented, however, in ways that were not likely to be sustained by clinics on their own. The vast majority of Angolans with malaria are not attending public health clinics, and many Angolans are self medicating for malaria, with drugs of little or no efficacy. Resistance to chloroquine has rendered this once effective drug of limited and diminishing use. With the introduction of new, more expensive drugs for malaria there is a need both for better public education and better control of the quality of drugs in the marketplace if these drugs too are not to become quickly ineffective. The MoH will need support to take on this massive task.

Despite efforts to engage community groups in Reforço activities, the project's outreach approach was found to be premature. First, the novelty of the team in the target area meant that staff were received with caution. In Luanda, most organizations were linked to a political network that closely oversaw activities in the bairros. Any NGO attempting to work in a specific area needed to coordinate and secure clearance from the municipal, communal and section leader before they could begin. This requirement seriously constrained most community initiatives in Luanda.

It was hoped that the more rural environment of Kwanza Sul and Bié would be more conducive to community participation, especially since PVOs had already established ties at that level. Given that it would take time before the target clinics were able to provide the full range of necessary services, it was considered to be in everyone's best interest if a significant amount of work on both prevention and appropriate care for the most common causes of morbidity and mortality were carried out at the community level. It was also assumed that communities could provide voluntary labor for clinic reconstruction. Unfortunately, even in rural areas, efforts to stimulate community participation had disappointing results.

G. *Job aids to Support Quality Improvement*

One of the project's most important achievements was the production of material to reinforce training that will maintain a presence in Angola after Reforço has finished its work. In partnership with the National Directorate of Public Health, the project produced a series of manuals to facilitate proper service procedures. The materials reinforced existing MOH policies for primary health care services, and promoted the concepts advanced during Reforço's provider trainings. Figure 5 lists materials developed, reviewed, and produced in partnership with national and provincial MCH officers (and in particular CAPEL), to respond to needs of the Luanda Province as well as the Bié and Kwanza Sul provinces.

Figure 6. Job aids to support quality improvement

BROCHURES
Family Planning and STIs
Malaria Prevention

SERIES
Procedures Manuals for 1st tier health facilities: Family Planning/STIs/HIV-AIDS, Prenatal, Delivery, Post-partum care, Infant health, PMTCT, Emergency abortion.
Prenatal care procedures

MANUALS (illustrated, 20-100pages each)
Infant Care Manual
Infant Development Manual
Procedures for Providing Pregnancy and Family Planning Consultations
Procedures Manual for Birth Attendants: Newborn Care
Prenatal Consultation Procedures Manual
Facilitator's guide to Infection Prevention training
Infection Prevention Training Manual

PAMPHLETS
"10 Steps to Successful Breast Feeding"
"Malaria Treatment and Prevention"
"Community Participation to Combat Malaria"
"Preventing Malaria in Children"
"Child Development"
"Family Planning"
"Sexually Transmitted Infections"

POSTERS
Malaria: Case Management during Pregnancy
Preventing Vertical Transmission of HIV-AIDS
Procedures for Referring Women with Critical Eclampsia
Case Management of Newborns with Critical Respiration Problems
Schedule for Administering Magnesium Sulfate to Treat Eclampsia
Diagnosis and Treatment of Chronic Hypertension
Treating Hemorrhage During Pregnancy
Preventing Malaria During Pregnancy
Prenatal Care and Birth Plan
Prenatal Care and Postnatal Follow-Up
10 Steps to Successful Breast Feeding
Classifying HIV-AIDS Cases
10 Steps to Quality Infant Care for Providers
Diagnosis and Treatment of Hemorrhage during Pregnancy

TSHIRTS
"Activista – Educacao de Jovens" to identify MCH providers that promote community awareness of malaria and sexual and reproductive health
"Projecto Reforço: Saude Comunitaria – DPSL" for DPSL staff that worked with Reforço
"Reforço Project" for project staff working at the health centers

H. *Infrastructure development*

To support service improvements in Luanda, Reforço and the MoH facilitated rehabilitation of the four health centers' dilapidated infrastructure and medical equipment. Project funds were supplemented with money from alternative sources where possible to accomplish structural improvements.

- **Viana** To increase access to maternity services, Reforço and the DPSL constructed a small birth room in the **Viana II** health center, serving one of the most populated areas of the municipality. The US Embassy financed the construction of the new facility at a cost of $40,000. Reforço secured pre-delivery

and post-delivery beds for the new maternity ward. With additional funds from USAID, Reforço attained new basic equipment for maternity services.

- **Cazenga** With $95,000 from ESSO Exploration of Angola, Reforço constructed a maternity ward at **Hoji ya Henda** and procured new delivery equipment. The Defense Attaché Office of the US Embassy in Angola committed $75,000 for structural improvements at the **Asa Branca** health center, including complete renovation of its 22-bed maternity ward.
- **Cacuaco and Cajueiros** Reforço coordinated renovation of the maternity wards in the Cacuaco health center and the Cajueiros hospital. The Cacuaco facility now has a new reception room for its maternity ward and prenatal care areas. A post-abortion care area was added to the renovated maternity ward at the hospital.

One of the first issues to be faced in Kwanza Sul and Bié was the basic rehabilitation needs of rural health facilities. Much of the health infrastructure had been targeted during the war; and existing structures were often without roofs, doors and windows. These needed to be replaced to provide the minimum circumstances within which to begin seeing patients and to provide security for medical equipment. The facility assessment tool that was initially developed by Reforço for use in Luanda was modified to effectively capture the infrastructure and equipment needs in the provinces. Based on the results of a facility assessment in Kwanza Sul, repairs were made to a number of facilities (with added assistance from the Red Cross). Though it was clear that other facilities needed rehabilitation, neither Reforco nor project partners had resources for additional repairs; rehabilitation of other facilities in the provinces were continuing based on criteria defined by the respective funding sources.

The original assumption that the communities would be actively involved in the construction of the clinics and more involved in their operation proved illusive. Community members were focused on reconstructing their own homes and lives and the clinics were, at best, a secondary consideration.

J. *Conclusions and recommendations*

The Reforço Project supported health systems development in Luanda and two outlying provinces from mid-2002[7] through September 30, 2005. The total cost to the US Government was eventually $4,930,909. In addition, Reforço was able to generate a cost share of more than $800,000, including from the private-for-profit sector[8].

From the beginning, Reforco was an ambitious project operating in exceptional circumstances.[9] Its achievements, while perhaps less than potential, are nevertheless

[7] The cooperative agreement was awarded on May 1, 2002, and the Chief of Party Jaime Benevente arrived on August 4.
[8] Based on final figure.
[9] Reforco was USAID's first health project in Angola after nearly 30 years of destructive civil conflict. The country's focus was on emergency relief rather than development. Even national ministries based in

notable. Reforço demonstrated and developed replicable procedures for quality improvement which the Luanda Provincial Health Department has since applied in eleven clinics (expanding to 25 in January). These quality improvements, moreover, seem to have contributed significantly to increased clinic utilization and to improved case management (especially for diarrhea and ARI). Reforço also helped a small working group develop new malaria prevention standards (intermittent presumptive treatment – IPT - of pregnant women, as well as appropriate use of bednets). These standards were not immediately accepted but their dissemination is now underway.

The Reforço experience, both positive and negative, should contribute to future programming, for USAID as well as for its Angolan partners:

- Quality improvement work, for example, while perhaps expensive in terms of human resources, should form part of any strategy to increase public access to, and appropriate use of, health clinics. Reforço demonstrated that rapid improvements are possible and that these contribute directly to service utilization.
- Community behavior change, coupled with appropriate systems support (bednet availability, regular contraceptive supplies), has been proven effective and should also accompany clinic-based strategies.
- Any future MCH work in Angola should follow up on the excellent start Reforço made for incorporating malaria detection, treatment and prevention into the routine work of antenatal clinics. Reforço helped turn the Cacuaco health center into a learning laboratory for the Roll Back Malaria partnership in Angola and demonstrated the tangible results that such working partnerships can produce. Training materials are in place, strong working relationships have been developed, and this success has already bred additional successes with other partners.
- Provincial expansion remains essential and will eventually become feasible as the National Ministry of Health extends its reach beyond Luanda. Provincial success will depend on the delegation of discretionary authority over planning and budgets to provincial and municipal health authorities and to their being held accountable for working within national norms and standards toward achieving national public health goals.
- The crying need in Angola is for systems development: bednet distribution, pharmaceutical management, supervision, information systems, and so forth. Whenever funding is limited to single technical interventions, it should be targeted to locations where these more comprehensive management systems are in place or being developed by others.

Luanda had limited experience or orientation for working outside the municipal area. The city itself had grown enormously because of the refugee influx, and municipal services of all kinds were undeveloped. Reforco's funding level was small relative to overall need, yet a higher funding level at this early stage might have exceeded the country's absorptive capacity.

Reforço benefited from its excellent relationships with the Luanda Provincial Health Department and is grateful for the technical and financial support of USAID/Angola and several cost-share partners (especially Pathfinder International, International Medical Corps, SAVE, and ESSO Exploration). [10]

[10] MSH allocated insufficient resources for provincial work. Stronger MSH leadership might have resulted in reinforcement of relationships and greater impact and involvement at the provincial level.

Annex I: Criteria to Assess Quality Improvement in MCH Services

Prenatal Care: Criteria of Performance

1. The unit is organized to bring about prenatal care activities making use of a minimum calendar of four visits.
2. The unit guarantees the supply of materials/medications for the prevention of pregnancy related complications.
3. The unit prepares informative materials about prenatal care and conducts educational activities for pregnant women.
4. The unit guarantees referrals for pregnancy and childbirth risks.
5. The providers are kept up to date about prenatal care.
6. The unit ensures early identification of pregnant women, encouraging the first consultation during the first trimester.
7. The health attendant properly welcomes the pregnant woman during the pre-natal consultation. (Criteria 7-11 should be evaluated in a sequential order, as part of the same consultation.)
8. The attendant properly conducts the woman's clinical history during the pre-natal consultation.
9. The attendant properly conducts the woman's PHYSICAL EXAM – OBSTETRIC during the pre-natal consultation.
10. The attendant properly conducts the POST EXAM TASKS during the prenatal consultation.
11. The attendant properly uses the pregnancy card during the prenatal consultation.

Attention to Childbirth

1. The maternity ward offers attention 24 hours each day.
2. The maternity ward routinely conducts an initial, rapid evaluation of the woman in labor.
3. The health attendant conducts a formal reception of the woman in labor. (Criteria 3-9 ought to be observed in a sequential order, as part of the same consultation.)
4. The health attendant properly completes and revises the clinical history of the woman in labor.
5. The attendant properly conducts the physical and obstetric exam.
6. The health attendant drafts and implements a plan for caring for the woman in labor, according to the results of her clinical history and physical, obstetric and vaginal exams.
7. The health attendant uses a partogram to observe and properly execute the childbirth plan.

8. The health attendant conducts childbirth cleanly and safely, including active handling of the third stage.
9. The health attendant properly conducts active handling of the third stage.
10. The health attendant properly conducts an initial rapid evaluation and immediately cares for the newborn.
11. The health attendant properly cares for the woman immediately following the birth.
12. The health attendant properly provides education for post-birth health.
13. The maternity ward offers attention to the woman six days after birth.
14. The attendant properly conducts a resuscitation of the newborn.

Family Planning and Postpartum

1. The unit is organized to develop integrated activities for postpartum, family planning, handling sexually transmitted diseases and other problems related to gyno-obstetric consultations, including examination for breast and uterine cancer.
2. The attendant properly welcomes the patient.
3. The unit offers proper postpartum care at 6 weeks.
4. The attendant provides proper family planning consultation.
5. The attendant conducts proper breast exam.
6. The attendant examines correctly for cervical cancer.
7. The attendant properly conducts a syndromic exam for sexually transmitted diseases. (If more than one health care worker attends to the patient, observe the different workers.)
8. The attendant properly conducts IUD insertion.

Child Care

1. The attendant properly conducts a childcare consultation (growth and development from 0 to 5 years).
2. The attendant properly conducts a consultation for ill children 2 to 5 years of age, according to the IMCI strategy.
3. The attendant properly records the ill child.
4. The attendant properly completes the infant health card.
5. The attendant properly applies oral rehydration therapy.
6. The attendant takes advantage of all opportunities to vaccinate children.

Vaccination

1. The ice chest in the vaccination room is appropriate and adequately organized for packaging vaccines.
2. The responsible attendant properly registers the administered vaccine on the monthly vaccine card and on the card of the child, pregnant woman or adult.
3. The unit prepares all recommended vaccines in quantities sufficient for one month.
4. The attendant properly performs the subcutaneous vaccine technique.

5. The attendant properly provides the BCG application.

Organization of Services

1. The health center has adequate mechanisms for presenting information to clients.
2. The unit team identifies problems, proposes solutions, and implements plans to better continue the quality of services.
3. The unit uses one clinic archive with specific data for different maternal health services and the system is useful.
4. The unit makes use of routines/norms for its basic functions.
5. The unit makes use of job descriptions for MCH staff.
6. The unit monitors and optimizes the time the client spends in the clinic.
7. Data is registered daily, consolidated monthly and sent to the municipal or provincial level.
8. Collected unit data are used for decision-making.
9. The unit team evaluates client satisfaction periodically and shares the results with the municipal administration.
10. The unit has a monitoring system for consultations.
11. The unit guarantees attention to the client (client examinations).
12. The unit distributes medicines adequately.

Environment

1. The unit has a waiting room in adequate condition.
2. The unit has adequate bathrooms for staff and clients.
3. The other rooms in the unit have adequate furniture for client examinations.
4. The unit has adequate ventilation.
5. The unit is well lit.
6. The reception records are adequate for staff and clients.
7. The unit has a break room for staff.
8. The unit has adequate supplies for applications and oral rehydration therapy.
9. The unit has necessary materials and instruments to attend clients.
10. The unit has a one-month supply of necessary materials.
11. The unit has a one month supply of basic medicines and contraceptives.
12. Staff handle and store medicines and contraceptives appropriately.
13. The unit has a one month supply of printed materials for client education/information.

Infection Prevention

1. The unit prepares treated water.
2. The unit staff correctly use waste disposal containers.
3. Staff take necessary infection prevention measures.
4. Staff adequately prepare the decontamination solution for materials and equipment.
5. Staff adequately prepare cleaning solutions.

6. Staff display correct use of the autoclave.
7. Staff use appropriate decontamination techniques.
8. Staff use appropriate sterilization techniques.
9. Staff have an adequate system for disposing of residual materials.

Annex 2. Report on Reforço's Provincial Expansion

At the request of USAID and with a desire to reach the underserved population in the Angolan provinces most damaged by the war, the Strengthening Mother-Child Health Services Project (MCH or *Reforço* in Portuguese) expanded project activities to two additional provinces—Kwanza Sul and Bié—beginning in 2003.

Expansion to the provinces was carried out within the context of the existing USAID Strategic Objectives related to improved access to services, improved quality of services, and improved demand for services. The intermediate results for the above mentioned Strategic Objectives in this expansion are:

a) Strengthen the delivery of primary maternal and child health services in selected municipalities of these provinces as a basis for future scale up;

b) Promote the involvement of communities in this improvement effort;

c) Reinforce the overall management and planning capacity of the provincial and municipal health teams; and

d) Develop a model for local health system strengthening that could be replicated in other municipalities in these provinces and elsewhere in Angola.

Given the operational capacity and experience of PVOs working in the provinces and the importance of linking their efforts with those of the Ministry of Health (MINSA), the Reforço project was committed to implementing the provincial expansion in partnership with PVOs. This partnership was designed to maximize the limited resources of the Reforço project, draw on the experience and networks of PVOs in the provinces, and permit MCH project staff to focus on their areas of technical and managerial expertise. Reforço expanded its agreement with partner Save the Children-US (SCF) for work in Kwanza Sul, and initiated an agreement with CARE for MSH work in Bie.

Background

In 2002 the Reforço MCH project began working with the Health Delegation of the Province of Luanda (DPSL) to strengthen the delivery of integrated services in four health centers. Reforço worked directly with Luanda provincial authorities to improve MOH capacity in managing and supervising health sector activities. Because both national and international rehabilitation efforts aim to move beyond Luanda to the provinces most dramatically affected by the war, the Reforço project was encouraged by USAID to expand its scope, and initiate similar efforts in these provinces.

Reforço's counterpart at MINSA was the DPS of Luanda. Therefore the project moved cautiously to avoid antagonizing the DPS of Luanda by reallocating some level of effort to the provinces.

Within the target provinces, much of the health infrastructure was destroyed during the war. Remaining health facilities were staffed with personnel that had received limited, and in some cases no, formal training in diagnosing and treating the diseases which are the major causes of morbidity and mortality among women and children. Combined with the limited supply of essential drugs, this situation resulted in limited demand and underutilization of health services in the provinces.

Partnership with PVOs

PVOs working in the provinces were actively engaged at the community level, attempting to address the emergency situation created by the war and assisting in reintegration efforts. Several PVOs expressed interest in transitioning from emergency relief to community development activities, and appeared to be positioned to assist in strengthening the institutional services that these communities need. The assumption behind Reforço's expansion to the provinces was that both access and services could be improved in some initial health facilities, providing the basis for a phased province-wide expansion by MINSA in the future. It was further assumed that these initial efforts would be linked to an expanded and more integrated role for existing community volunteers in prevention, referral and follow-up.

The channeling of emergency and post-conflict relief efforts through the PVOs in the provinces had allowed them to develop an installed provincial capacity that consisted of field staff with some experience coordinating with MINSA; logistics capability to support this staff; and administrative capability to manage and account for funds. A number of PVOs had also been organized into a consortium to receive PL480 food and funds as part of USAID's food security program or were working collaboratively within the context of CORE supported polio eradication and malaria prevention.

Given that success at the provincial level would require a commitment that went well beyond the Reforço MCH project end date of September 2005, and given that scale-up (in the foreseeable future) would likely be contingent on the incorporation of additional PVOs, the MCH project determined to seek an ongoing partnership with the PVO community.

This partnership with the PVOs was envisioned at three levels;

a) An enhanced role for Save the Children within the existing MCH Project to allow them to take the lead in coordinating this initiative nationally;

b) Specific province level contracts to support scopes of work developed with the individual PVOs (CARE in Bie, Save in Kwanza Sul); and

c) Sharing the implementation experience with a broader group of interested PVOs in anticipation of future scale-up both within these provinces and in additional provinces.

Recognized Challenges

The intermediate results of the provincial expansion initiative each contained their own specific challenges:

a) *Strengthen the delivery of primary maternal and child health services, in selected municipalities of these provinces, as a basis for future scale up.*

Whereas the original project's challenge in Luanda was to improve the quality of existing services, the challenge in the rural provinces was to get a minimal package of services delivered. One of the first issues to be addressed was physical infrastructure of rural health facilities. Much of the health infrastructure of these provinces was targeted during the war; existing structures were often without roofs, doors and windows. These needed to be replaced to provide the minimum circumstances within which to begin seeing patients and to provide security for medical equipment. In Kwanza Sul, the partnership was expanded to include the Red Cross, which was working on infrastructure repair. The facility assessment tool that was initially developed by Reforço for use in Luanda was modified to effectively capture the infrastructure and equipment needs in the target centers there in the provinces.

Staffing challenges differed between Kwanza Sul and Bie. In Kwanza Sul, Reforço and PVO partners determined staff skill levels through interviews and observations. The challenge was to determine existing skill levels, then determine what skills might be built upon through capacity-building supervision and which would require more in-depth training. Literacy levels among staff in Kwanza Sul are low; training would preferably be hands-on competency based training.

In Bie, a significant number of clinic staff were drawn from the demobilized opposition forces of UNITA. Some of the staff had apparently received some medical training with UNITA as field medics attached to combat forces. The large number of clinic staff hoping to receive government employment and training presented its own challenges. In Bie, as well, Reforço staff and PVO partners interviewed staff and observed services to gauge skill levels.

The project needed to work with the provincial MOH team to determine what components of Angola's national minimum package of health services were being delivered in Kwanza Sul and Bie, as well as to assess what the principal barriers were to completing the package. From earlier investigations it was clear that lack of essential drugs was a problem; MINSA had largely been operating with donor supplied prepackaged drug kits.

b) *Promote the involvement of communities in this improvement effort.*

The project's experience in peri-urban Luanda was that the dominant political party (the MPLA) organization at the community level impeded community involvement in the health centers. It was hoped that in the more rural environment of Kwanza Sul and Bie that the situation would be different.

Given that much of the repair that was needed by the facilities was less technical in nature, it was assumed that if basic materials could be purchased, the communities in Kwanza Sul and Bie could provide much of the necessary manpower. Given that it would take time before the target clinics were able to provide the full range of necessary services, it was considered to be in everyone's best interest if a significant amount of work on both prevention and appropriate care for the most common causes of morbidity and mortality was carried out at the community level.

Partner PVOs were to take the lead in working with the communities to foster a sense of community investment in improving the facilities, and a sense of partnership with MINSA in defining the services to be delivered and how they are accessed. The PVOs were also considered to be well positioned at the community level to begin the dialog necessary to support appropriate care seeking and curative care. The PVOs were asked to look carefully at the community volunteers (*activistas*) with whom they had been working and determine what roles they, and other community members, might take on to support positive behavior change.

c) *Reinforce the overall management and planning capacity of the provincial and municipal health teams.*

Management talent in the rural provinces is scarce. Management positions have been filled using both political and professional criteria, with doctors (when available) in senior management positions. Though the need for improved management might be apparent to an external observer, it was not clear what the provincial and municipal teams perceived their own needs to be; as health professionals pressed into service as managers, their orientation might well be more reflective of their training as clinicians than as stewards of a population-based public health approach. As political appointees, it was thought they might also be more sensitive to the political visibility of hospitals versus primary care clinics.

The challenge for the project was to use the collaborative efforts around improving service delivery in the target heath centers to introduce a set of good management practices with broad application, and to facilitate their adoption at the provincial level. The project had already gained some success in this in Luanda in its use of quality improvement instruments.

d) *Develop a model for local health system strengthening that could be replicated in the rest of the municipalities in the province and elsewhere.*

Given the time remaining in the project, Reforço focused on ways to leverage its work to inform future decisions on expansion, both by the provinces themselves and by the broader partnership looking to address the need for similar efforts in other provinces.

First Phase Implementation *May 2003—April 2004*
Given the insecurity around future funding, and the limitations of MINSA provincial counterparts, during the first year of implementation the project moved cautiously and began by looking at how the existing partnerships with IMC and SCF might be expanded.

IMC had a substantial field operation in Huambo province, which was a high priority province for USAID. With the end of post-conflict related funding around that same period, however, IMC began downsizing its national and provincial presence and was unable to provide any matching human or financial resources to a Huambo partnership.

The project simultaneously pursued the possibility of expanding its existing partnership with SCF. SCF was engaged in both polio campaigns and food security efforts in the province of Kwanza Sul. SCF expressed interest, a rapid assessment visit was made to the province in July of 2003, and a draft agreement was discussed in August. The SCF director's absence from the country and subsequent departure, as well as a lack of clarity among SCF and MSH on how the scope of work and project modifications were to be negotiated, delayed a signed agreement until April of 2004.

CARE, which had a significant on-the-ground presence in Bie, plus a track record in child survival and food security assistance in the province, expressed interest in a partnership with the project. A rapid assessment visit was carried out in November of 2003 and an initial draft SOW was developed in February of 2004. A second site visit carried out in March, and an agreement signed in May.

Catholic Relief Services (CRS), which had considerable presence and relevant experience in Benguela province had also expressed interest, but current commitments with SCF and CARE already constituted a significant challenge given limited time, project staffing and financial resources. Incorporation of CRS was postponed until there was a clear possibility of a follow-on project.

Reforço and PVO partners coordinated with the *Delagoções Municipais* and the *Direcção Provincial de Saúde* in Kwanza Sul and Bie, working to improve capacity in planning, supervision and M&E.

In **Kwanza Sul**, the MCH Project proposed to develop MSH interventions through a joint venture with SCF's Field Base Office of Kwanza Sul. The selected areas of intervention were the municipalities of Gabela and Ebo. The project planned to complement SCF's provincial health team by providing resources for training and logistics, as well as technical assistance to transfer and adapt lessons from Luanda to Gabela and Ebo. SCF assumed responsibility for direct implementation of activities.

(Annex 2) Table 1: Population of Kwanza Sul Province, Municipalities of Gabela, Ebo

	Total Population	Children Under 1	Children Under 5	Women 15 to 49	Pregnant Women
Gabela	220,000	11,660	52,800	46,200	20,900
Ebo	175,000	9,275	42,000	36,750	16,625
Total	**1,014,000**	**53,742**	**243,360**	**212,940**	**96,330**

Gabela has three health centers: the Amboim health center, the health center at *Delegação Municipal*, and the Hospital Boa Entrada. However, project visits indicated that only the first functions as a full health center. Clinical and administrative materials and equipment at all the units were extremely scarce. Essential drugs were not available for outpatient clients since the last quarter. Hospital of Amboim functions as a referral hospital with 100 beds, though its maternity is currently closed.

The health center of Ebo serves a population of 13,000. The remaining population—about 162,000 people--live throughout the municipality, served by seven health posts (2 in Casange, 3 in Conde, and 2 in Shoa).

In **Bié** the project partnered with CARE to expand MCH interventions in the municipalities of Chinguar and Andulo. Reforço agreed to complement CARE's local health team and the MCH interventions by providing resources for training and logistics, as well as technical assistance to transfer and adapt the lessons learned from Luanda.

(Annex 2) Table 2: Population of Bié Province, Municipalities of Shinguar, Andulo

	Total Population	Children Under 1	Children Under 5	Women 15 to 49	Pregnant Women
Chinguar	158,875	7,071	52,800	31,775	8,210
Andulo	172,690	7071	42,000	34,538	7,565
Total	**331,565**	**13,576**	**94,800**	**66,313**	**15,775**

With a total population of 160,000, the municipality of Chinguar has a health center and a small hospital, though the hospital is still not fully operational. In addition, Chinguar has two other functioning health posts—Cangote and Cutato—that together serve 60% of municipality's population.

With a population of 90,000, the municipality of Andulo has one health center and three health posts. Project staff learned that experienced health providers had been displaced

toward Kuito, and the local service delivery points in Andulo had been staffed with new, untrained personnel. Most health providers in Andulo lacked basic knowledge of MCH.

The following is a list of the proposed package of MCH service interventions for the provinces:

Maternal Health

- Improved of prenatal care services with particular emphasis in the prevention and treatment of malaria during pregnancy.
- Safe deliveries by identifying risks and conducting appropriate referrals, with particular emphasis in the integration of trained birth attendants (TBA) to existing health system.
- Increased availability of family planning and other reproductive health services.
- Promotion of postpartum care immediately after the delivery, during the first week following delivery, and over the first semester following birth.

Child Survival/IMCI

- Improved management and treatment of fever in children under five, with emphasis on appropriate diagnosis of malaria and IRA at health facilities and within provincial communities.
- Improved management and treatment of diarrhea and prevention of malnutrition at health facilities and within provincial communities.
- Promotion of growth monitoring activities.
- Appropriate conditions for routine vaccination services at health facilities, accompanied by outreach activities.

Results of First Phase Implementation *May 2003 to April 2004*

During this period the Reforco team and PVO partners organized negotiations with the provincial departments of health in Luanda, Kwanza-Sul and Bie, to review and analyze the feasibility of project provincial expansion. Trips and meetings were conducted in both provinces. At this stage both PVO partners were conducting and organizing meetings with key partners in Kwanza Sul and Bie.

In Kwanza Sul, a Reforco team conducted a trip assessment to Amboim and Ebo municipalities to evaluate the level of health services and facilities. The team visited some health facilities jointly within Save the Children and municipal departments of health.

Bié: A field assessment was done to evaluate the health needs in Chinguar and Andulo municipalities. The Reforço team organized meetings with CARE and the provincial department of health to revise and analyze the project activities.

Second Phase Implementation *May 2004—April 2005*
USAID continued to support Reforço's provincial expansion. While the initial approach was to increase health service delivery in the provinces, during the second phase of the provincial expansion effort USAID was interested in defining what approach might be taken in the future; in particular, USAID was interested in system strengthening through the DPS and determining how best to leverage PVO experience in the provinces to facilitate this strengthening.

MINSA announced an initiative to strengthen health service delivery capacity at the municipal level, which led to a re-examination of the legal, financial and managerial basis for current services at that level. Simultaneously, the E.U. announced a large scale effort with MINSA to strengthen managerial capacity at the provincial level. Both of these efforts were focused at the policy and institutional level, while the Reforco MCH project was attempting to work the operational level.

Building Demand with MINSA
By the end of the second year, the Reforco project had some success in marketing its provincial expansion to Angola's national maternal and child health programs in the MOH as a vehicle for provincial implementation of their respective national strategies. However, the project still lacked a strong national champion for its provincial expansion, and had yet to fully develop the working relationships in the respective provinces that would facilitate system strengthening.

One factor in a national champion for provincial expansion not stepping forward may have been that the MCH project's initial counterpart was the DPSL, and the DPSL had no direct institutional role in relation to its provincial equivalents. While the provinces may rely technically on MINSA, they are legally and financially dependent on provincial governors.

The working relationship with the provincial and municipal management teams is also conditioned by the roles of MINSA at the national level and the governors at the provincial levels and may be further complicated by the channeling of project resources through the PVOs. Much of the previous PVO work at the provincial level was coordinated (and defended) by the UN through OCHA. At this point, UN presence was being phased out, but no consensus existed about how the role of coordination and oversight of PVO efforts would be carried out at the provincal level in the future.

Results of second phase implementation *May 2004 to September 2005*

Facility assessment tool modified and applied. The Facility Assessment Tool was modified, PVO and MINSA staff in Kwanza Sul were trained in its use. Based on the results of a facility assessment in Kwanza Sul, repairs were made to a number of facilities and recommendations were about staffing changes. Though it is clear that other facilities need rehabilitation, neither Reforco nor project partners had resources for additional facility repairs; rehabilitation of other facilities in the provinces were continuing based on criteria defined by the respective funding sources.

Technical Training Capacity Developed and Staff Trained. CARE had conducted in-house training prior to entering into the partnership with the Reforco MCH project, and moved forward with initial training of clinic staff in Bie using existing materials.

In Kwanza Sul, SCF took more time to begin training, but took advantage of the opportunity to coordinate with the national maternal and child health programs, bringing trainers from Luanda to work with supervisory staff in Kwanza Sul. Those supervisory staff then trained clinic level staff. Based on this experience, the project began to shift its focus to build more training capacity with the supervisory staff in Bie

Community level assessments. These assessments were carried out in communities in both Kwanza Sul and Bie. SCF was successful in involving MINSA in this process in Kwanza Sul. Provincial assessments found significant gaps between health facilities and local residents: respondents did not think health centers could provide the desired level of care, or offer what the community viewed as appropriate providers. In both provinces, those interviewed expressed a strong preference for additional trained female staff to provide maternal and reproductive health services.

Revised Assumptions

Reforco experience in the provinces by the end of the second year indicated that preliminary work could set the stage for future interventions, that MINSA could be encouraged to participate in the process, and that inclusion of PVOs would inspire further PVO participation. Accomplishing these, however, would take more time than expected.

It was assumed that provincial and municipal teams would be anxious to engage in activities that would allow them to carry out reconstruction of health facilities and training of health staff. The reality was that both the province and the municipal level had few managerial staff, with multiple responsibilities and limited discretionary authority. In Kwanza Sul, where SCF has been working with these authorities for some time, the project was able to gain ground. CARE appears to have had more success engaging at the municipal level in Bie, but less at the provincial level.

Capacity of provincial and municipal teams

The MOH is able to provide staff salaries and essential drug kits in the provinces. Other resources are contained in budgets controlled by the provincial governors, but are at the governor's discretion. There is also contradictory legislation defining how public health

is structured and administered at the provincial and municipal level. Thus provincial or municipal level managers can enter into good faith agreements with projects or PVOs, but have little control over their ability to comply with the agreement; this has been a major challenge of implementing meaningful activities in the provinces.

Ability to Scale up Interventions
Pending dramatic changes in available resources and concurrent planning, financial, supervisory, managerial and monitoring skills, there is little expectation that the provincial or municipal level will have the capacity by themselves to scale up this experience. It had been the project's assumption that once the provincial expansion was underway, there would be opportunities to incorporate additional PVOs into the process at the provincial level. Unfortunately, since this initiative began there has been a dramatic reduction in the number of potential PVO partners at the provincial level; the reduction in post-conflict aid and food aid has caused most international PVOs to leave a number of provinces, eliminating them as potential scale-up partners.

Final activities May 2005-September 2005

During the last phase of the project there was a conscious shift in focus to consolidate gains and install a critical mass of training capacity within the provinces, rather than look to scale up in the future.

Selected clinics were rehabilitated and essential equipment was issued; staff training was conducted in select MCH services. Though the original focus of Reforco's provincial expansion was to strengthen services in clinics that had been identified as "high need" by the MOH and collaborating PVO, these clinics generally proved to be too widely dispersed and staffed with such poorly trained personal that it was difficult to maintain the regular contact and follow-up needed to assure the impact of interventions.

The original assumption that the communities would be actively involved in the construction of the clinics and more involved in their operation proved illusive. Community members were focused on reconstructing their own homes and lives and the clinics were, at best, a secondary consideration.

There were a number of other issues that arose, not all of which were resolved. At the community and PVO level, there was a high degree of interest in training TBAs, but the MOH policy was shifting away from supporting TBAs. As a result, several clinics continued to be staffed by male technicians, and TBAs trained by the PVOs expected the PVOs to support them with salaries and supplies.

In Bie, community activists were originally scheduled for a traditional work week. Since most of the community spent the week working in the fields, there was little interaction with PVO staff. During the consolidation phase, activists were assigned to work on weekends with the churches to much greater effect.

Since the PVOs were already active at the community level at the beginning of the project and remained so while the slow process of rebuilding the clinics took place, their efforts often stimulated a demand from the community that the clinics were unable to respond to. During consolidation a better balance was achieved.

The provincial and municipal health teams exist more in theory than in practice. Though efforts were made to do joint planning, share plans and conduct joint visits, it proved very difficult to get the designated MOH counterparts to accompany the process.

During the consolidation period the project focused on the technical supervisory staff and attempted to develop a critical mass of trainers among them in the requisite technical areas.

The project did not develop an effective model for system strengthening that could be easily replicated. A model for local system strengthening requires the political commitment of the provincial governor and the national government. Rather than working in isolated and widely dispersed clinics, such an effort should concentrate within a political entity, such as a municipality where certain synergies and scales can be better taken advantage of and where early gains will be visible enough to continue to encourage buy-in.

Lessons Learned

A significant lesson learned was the degree to which the different levels within MINSA operate in isolation. The national level has very little information about or communication with the provincial level. The principal public health authority at the provincial level is the *Delegado de Saude*, a political position which responds to the provincial governor. Since the provincial budget for health is defined and disbursed by the governor, this connection is important, but also means that this position responds more to the imperatives of the governor than national public health programs, policies or priorities.

The next level of management is the Director of Public Health. This position appears to be more technical than political but has little discretionary authority. Though this position is responsible for oversight of the different public health program areas, communication with national programs appears to be channeled through the *Delegado de Saude*. The legal basis for the public health structure at the municipal level is in dispute since contradictory legislation exists mandating two different structures.

At both the provincial and municipal level there is extremely limited staff operating with few resources that would facilitate their assuming managerial and supervisory roles. Though annual plans may be drawn up, they are done without knowledge of the budget available or a clear sense of how they might be carried out. Knowledge about national

programs and strategies is limited, as are norms and standards; even when these are known, there appears to be limited incentive for enforcing them. The service providers currently staffing the provincial health centers and health posts generally have very limited formal training and receive limited if any supervision from the municipality.

In the post conflict environment, the provincial priority is on facility repair and construction. The decision about what to repair or construct appears to respond to the desires of individual administrators at different levels, and their ability to acquire labor and materials for construction. Decisions do not appear to respond to any public health or demographic criteria, and funding for actually staffing facilities once constructed is not considered.

MINSA

Given the current political reality, the ability to achieve a significant level of success at the provincial level will require the support of the provincial governor.

To be able to implement national public health strategies at the provincial level a dedicated group of facilitators and trainers that extends well beyond national and provincial program staff is needed.

Given the limited formative training and low skill levels of a significant part of the providers staffing provincial health posts and health centers, short-term classroom training is unlikely to modify behavior sufficiently to assure appropriate clinical case management. Expanding the capacity of provincial referral centers into “learning labs” that health clinic staff can rotate through might prove more effective.

Given cultural norms, the ability to increase the number of women participating in maternal and reproductive health programs will be contingent on increasing the number of female technical staff.

For PVOs to provide assistance to MINSA in systems strengthening at the provincial level, longer term funding is needed to allow them to recruit and retain staff with the appropriate skills mix.

During this initiative MINSA agreed to have PVOs monitor goods and services that they themselves were providing, but was less inclined to share information with the PVOs about goods or services the PVOs were not supplying. This has significant implications for assisting MINSA in overall system strengthening.

MSH

Given the limited knowledge about new partners and what could realistically be accomplished in the rural provinces, MSH did not attempt to create a lot of visibility for this initiative so as not to create unrealistic expectations. This may have resulted in the initiative getting less support from MINSA counterparts.

MSH was building this initiative on an existing PVO presence, with existing PVO staff and work patterns. Thus a greater effort should have been made to clearly communicate to all involved PVO staff how this initiative was different from other efforts they were involved in and what was expected of them.

The project underestimated the amount of technical oversight, technical assistance and logistics support that would be required to support PVO efforts.

The extended time that it took to negotiate agreements with the PVOs resulted in lost momentum and reduced what could be accomplished during the life of the agreement.

The project did not appreciate the degree to which PVO field projects and national PVO headquarters operated autonomously and the implications this would have on everything from logistics support, to prioritization of activities to timely submission of reports.

Though the project was able to build facilitator/trainer capacity in the provinces by drawing on national program staff, the limited in-house training capacity of both the project itself and its PVO partners did not allow this to happen as quickly or extensively as would have been desirable.

PVOs

The previous experience and natural tendencies of the PVOs encouraged them to focus more on community-based activities than on potential systems strengthening with MINSA.

The motor pools maintained by the PVOs allowed MINSA staff greater opportunity to provide on-site support and supervision at the health center and health post level, but this will be impossible to sustain without continued PVO support.

The network of collaborative PVOs at the provincial level that the project envisioned as playing a key role in taking strategies to scale could not be developed as post-conflict and food security resources dried up and PVOs scaled back their provincial presence.

Though under this initiative the PVOs were able to tap into a pool of local unemployed mid-level technicians to staff its activities, increasing opportunities for employment with MINSA are likely to eliminate this pool to be drawn on for future efforts.

Future Role for PVOs at the Provincial Level

Despite the limitations and constraints identified above, there continues to be considerable interest in having PVOs support national strategies at the provincial level. The following is an attempt to identify roles PVOs might play in helping provincial staff respond to the demands these national strategies will place on them, and what technical and managerial skills they would need to bring to the task:

Technical

- Assist the Provincial Public Health Director and relevant section chiefs to increase their technical knowledge and capabilities related to integrated reproductive health (CISAR), integrated care of childhood illness (AIDI) and endemic diseases (malaria, HIV/SIDA, ITS, TB). This would involve assisting the provincial team to remain informed in regard to the norms and practices contained in the national Strategic Plan for Accelerated Reduction of Maternal and Infant Mortality (2004-2008) and the National Strategic Plan for the Control of Malaria in Angola (2005-2009).

- Assist the Provincial Public Health Director and relevant section chiefs in strengthening provincial and municipal capacity to train health center and health post staff in the relevant clinical and administrative skills relevant to CISAR, AIDI and malaria through the formation of a nucleus of provincial trainers (*nucleos de formadores provinciais*).

- Assist provincial and municipal trainers to carry out the training of target health center and health post staff in CISAR, AIDI and malaria.

- Assist provincial and municipal trainers to carry out follow-up supervisory visits to trained health center and health post staff in CISAR, AIDI and malaria.

- Assist provincial and municipal supervisors to develop and implement a monitoring and evaluation system based on clinical case management indicators contained in the national strategies that will allow them to accurately report against these indicators (see indicators below).

Managerial

- Assist the Provincial Public Health Director and relevant section chiefs to review the provincial and relevant municipal annual plans to identify activities which relate to the national Strategic Plan for Accelerated Reduction of Maternal and Infant Mortality (2004-2008) and the National Strategic Plan for the Control of Malaria in Angola (2005-2009).

- Assist the Provincial Public Health Director and relevant section chiefs to develop an action plan related to the implementation of the above strategies.

- Assist the Provincial Public Health Director and relevant section chiefs in defining the working group or mechanism through which the actions related to implementation of the above strategies will be coordinated in the province.

- Assist the Provincial Public Health Director and relevant section chiefs in developing and carrying out the relevant monitoring, evaluation and reporting requirements related to the above strategies.

- Assist the Provincial Public Health Director and relevant section chiefs in the dissemination and use of national managerial and administrative norms.

Indicators for Malaria from national strategy

% of health providers trained in AIDI. *Support AIDI training of child health providers from target health centers and posts. Assist the province in determining total number of staff providing child health care and determining how many of these have received AIDI training.*

% of health providers trained in national malaria treatment norms. *AIDI covers the treatment norms for children. Financing is likely to be made available by the Global Fund for training in new national treatment norms. Limited number of national program staff and limited number of trained facilitators will slow provincial level implementation. PVO assistance to the province in the development of provincial training capacity could help both national and provincial implementation.*

% of health providers in selected municipal maternal health consultations trained in presumptive intermittent treatment with SP. *PVO assistance to the province in the development of provincial training capacity could help both national and provincial implementation.*

% of health units in selected municipalities implementing intermittent presumptive treatment. *The need for pregnant women to present for prenatal consultation at least twice (once roughly 20 weeks after conception and again no later than the 32nd week after conception) to receive treatment represents a significant challenge for this strategy. PVO may be well positioned to carry out small scale operations research at community and facility level to identify approaches to improve participation.*

% of health units that correctly use national malaria diagnostic and treatment norms. *Reporting against this indicator presumes the ability of municipal level supervisory staff to carry out supervisory visits and observe clinical case management and availability of essential drugs. PVO assistance is likely to be needed to carry out these visits and report results.*

% of municipalities that receive at least one provincial supervision visit per month. *PVO assistance is likely to be needed to carry out these provincial visits and report results.*

Number of (malaria) coordination meetings held at the provincial level per year. *PVO assistance in planning and carrying out regular provincial coordination meetings is likely to encourage such meetings taking place.*

% of health centers without interruption of drug stocks of more than one week in the last 3 months.

% of prenatal consultation services without an interruption of SP for intermittent presumptive treatment (TPI). *The Essential Drug Program is responsible for maintaining stock. PVO support for training of health center staff is a poor investment if these staff don't have essential drugs. PVO support to municipal supervisors in monitoring drug use and availability, and assistance in transport of essential drugs should increase availability.*

Indicators for Child Health from mortality reduction strategy
It isn't clear how much thought has gone into how these indicators should be measured; it would be extremely difficult to get accurate population based data for most of these.

% of malaria cases in children <5 that received appropriate treatment. *Based on clinic observation or review of recording forms during supervisory visits*

% of diarrhea cases in children <5 that received ORS and continued feeding. *Could be gathered based on clinic observation of whether health worker gives ORS and counsels continued feeding. Could alternatively be based on interviewing mothers on practice last time child had diarrhea.*

% of pneumonia cases in children <5 that received appropriate treatment.
Based on clinic observation or review of recording forms during supervisory visits

% of children <1 that have received vaccination for DPT-3, Polio 3, Measles, BCG and yellow-fever. *Reliable data cannot be collected based on mothers recall and few mothers may have vaccination card.*

% of pregnant women that have received at least 2 doses of TT. *Not really a child heath indicator. Would most likely need to be based on recall*

% of municipalities with DPT coverage of 80% or higher. *Coverage surveys unlikely to be carried out, results unreliable unless almost all children have vaccination cards*

(AIDI Subset of key community practices)

Exclusive breast feeding until six months. *Might want to consider counseling complementary feeding after six months*

Take children for complete vaccination coverage (BCG, OPV, DPT, and measles) before age one. *Though this is appropriate it has become controversial given that cold chain has not been operating for several months.*

Children in malaria endemic areas should sleep under an insecticide treated bed net. *Should be conditioned by availability of insecticide treated nets.*

Families recognize when sick children need treatment outside the home and seek appropriate care. *May need further clarification of what "appropriate care "consists of.*

Annex 3. Reforço data sources: Indicators of impact and health coverage improvements

Originally, the Reforço MCH Project's monitoring and evaluation (M&E) approach encompassed two distinct, yet interrelated, areas: **effects on population,** through impact evaluation; and **effects on service delivery and systems performance**, through process evaluation and analysis of direct intervention results. The continuous assessment of quality improvement through the QI initiative was another key component in the project's evaluation (see Annex 1: Luanda Quality Improvement Results). While the QI results highlight improvements within the health units, this section analyzes available data on the project's impact, including expansion of services and health status of the population.

(Annex 3) Table 1: Population in Health Center areas under the Program, 2005

Health Centers	Total Population	Population Under 1	Population 1 to 4	Women 15 to 49	Pregnant Women
Cacuaco Sede	83475	4424	13940	17446	5092
Viana II	81063	4296	13538	16942	4945
Hoji ya Henda	174067	9226	29069	36380	10618
Asa Branca	155938	8265	26042	32591	9512
Total	**494,543**	**26,211**	**82,589**	**103,360**	**30,167**

The catchment areas of the four health centers served by the project in 2005 had a total population of slightly less than 500,000, including 212,160 **who we**re specific targets for Reforço MCH programs; 26,211 were children under one; 82,589 were children between 1 and 4 years old; and **103,360** were women of reproductive age. In addition to this population, there were another 100,000 people who did not reside in the areas of intervention but who spent a significant part of their time in the target areas because of their work, particularly in four or five markets close to the target health units. Although difficult to monitor, these people regularly seek health services in the units under intervention and comprise an important segment of the health units' responsibilities.

Use of service statistics to measure production of services

Reforço strengthened routine service statistics systems and assisted health center staff to use data for planning, monitoring and evaluation. However, data were not sufficiently reliable for routine use until approximately mid-2004.

Figure 1 shows the number of consultations reported by month from August 2002 until July 2005. The numbers fluctuate markedly from month to month during the early period, almost certainly due more to reporting variability than to service fluctuations.

The main source of this irregularity is infant services, where reported differences between one month and the next sometimes exceed 2000. Maternal data also show a high degree of irregularity.

Recognizing the inconsistency of reporting, Reforço developed a simple, standardized health and management information system for monthly reporting that aimed to increase the use of information for planning, monitoring, and evaluation. Using monthly service statistics reports, Reforço provided quarterly reports on programmatic performance to counterparts and service managers. Starting in May 2004, values for both sets of data started to present a more consistent trend—moderate increases in infant services and constant increases in maternal services—indicating an increase in reliability. Although it is necessary to consider this information with caution as service statistics have not yet been fully integrated into the function of the target health units, it is clear that the data collected in the last six or seven quarters are more stable than in previous periods.

(Annex 3) Figure 1: Time Series of Production of Services
Service Statistics August 2002 to June 2005

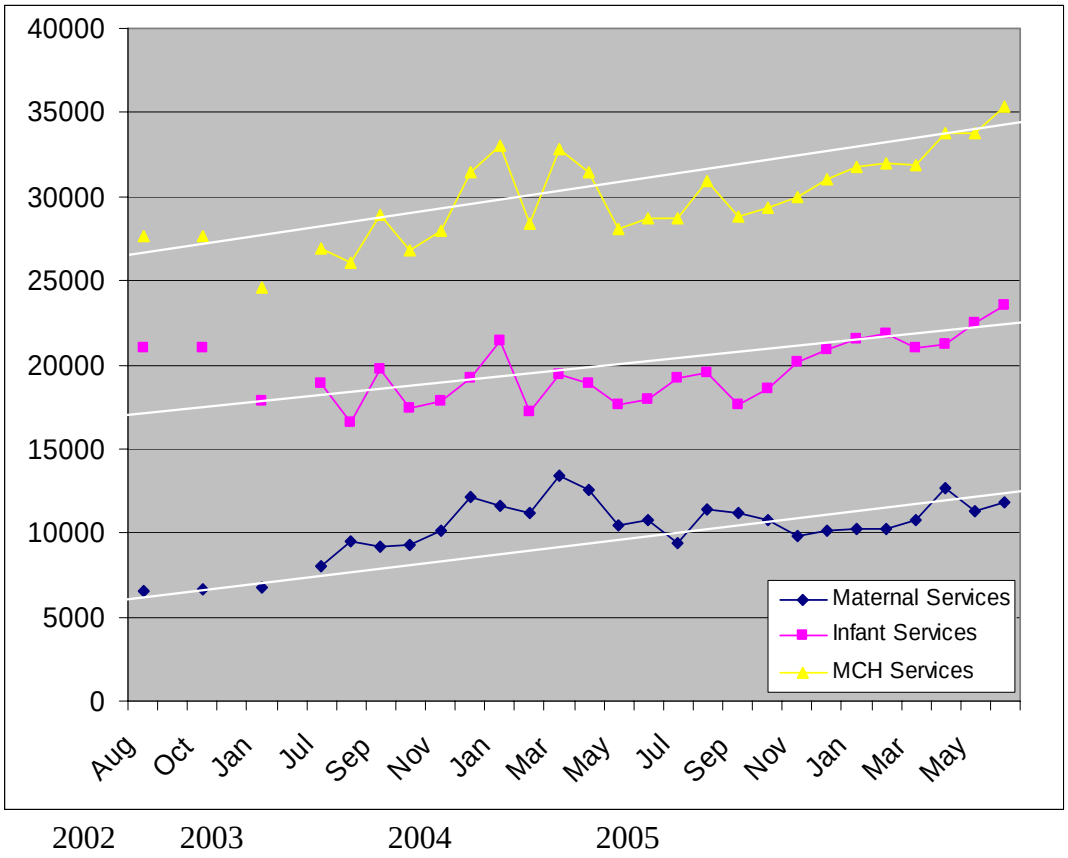


Figure 1 suggests an increase in MCH services from 27 thousand consultations per month in May 2004 to about 35 thousand per month by the end of the project, in July 2005. This expansion was possible because of the availability of health personnel at the target health units in Luanda. In fact, at the beginning of the interventions, some of the health workers in these units were underused due to the excess personnel. With the growing demand, the new service routine and organization made use of these personnel. In other words, new demand at the health centers has not resulted in a dramatic increase in each worker's tasks.

Finally, increased demand was facilitated by both the rehabilitation and reorganization of the physical clinical space in the health centers, as well as the improvements in medical equipment at health units. Both rehabilitation and re-equipment were tasks accomplished by the project under the quality improvement initiative.

Household surveys to measure population impact

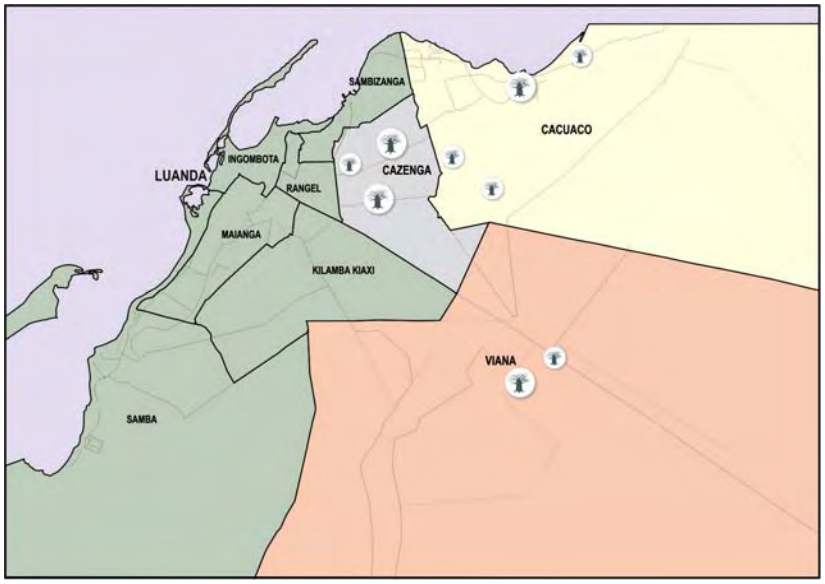
Reforço conducted two household surveys, to assess community needs and measure population-level impact. The first, conducted in November and December 2002, covered all six of the health center catchment areas then considered in the project service area, whereas the second covered only the remaining four. These two surveys offer our best means of estimating project impact. Further verification of the results would require calculating confidence intervals of the differences between the 2002 and 2005 data and disaggregating the data.

The 2002 survey covered 1,621 households. Data collectors interviewed 2,236 women of reproductive age and collected information on approximately 2,344 children under five. (A full report was submitted to USAID and shared with counterparts and other stakeholders at a public presentation in April 2003.)

The June 2005 survey covered 2000 households, interviewed 3000 women of reproductive age, and gathered information on 2800 children under five. The survey instrument was exactly the same as used previously.

The map in Figure 2 shows both the original areas of intervention of the project and the final areas targeted by the projects intervention. While the baseline survey sampled the entire areas of Cacuaco, Cazenga and Viana, the end-of-the project survey represents the areas marked with the project logo; about one third of the total population.

(Annex 3) Figure 2: Map of MCH Project Original and Final Areas of Intervention August 2002-September 2005



Social and demographic characteristics did not differ greatly:

- In both surveys, roughly fifty percent of the population surveyed was under 15 years of age.
- For every 100 women in the population, there were only 86 (2002) or 85 (2005) men, with a particularly acute imbalance in the 15-29 year age group (reflecting the loss of men due to prolonged war).
- Women of reproductive age represented 25 percent of the total population in both surveys.
- Almost 12 percent of those over 15 years of age have had no schooling, and levels of illiteracy are over twice as high among women as among men.
- Children under five represented 27 percent of the population and children under the age of one, 6 percent. On average, family units comprised around five persons.
- In both surveys, women headed one-quarter of all households, with more than 70 percent involved in some economic activity.
- In both surveys, the public sector was reported to be the principal provider of health services, in that slightly over 55 percent of the population in need of medical care went attended to a public health facility. (Another 12 percent accessed private health centers.) A third of those who were ill in the last two months resorted to self-medication.
- The cost of health services at the public facilities continued to be significantly more expensive (1,800 Kwanzas per visit) than in private facilities (900 Kwanzas per visit).

Two social measures - population with access to potable water and electricity as well as access to appropriate sanitary facilities – were lower at follow up than at baseline, suggesting a decline in economic conditions. It is difficult to know, however, if these differences were due to selection factors (i.e., slightly different universes) or to real changes in economic conditions.

Tables 2, 3 and 4 present USAID-selected indicators and their values for the 2002 and 2005 surveys, as well as percentage differences. Most indicators increased between the two dates, suggesting a positive effect of project interventions on the health status of the population.

A more detailed account of these changes between December 2002 and June 2005 appears below for those indicators closely associated with the specific interventions of the project such as maternal health, reproductive health and child health.

Prenatal Care and Deliveries

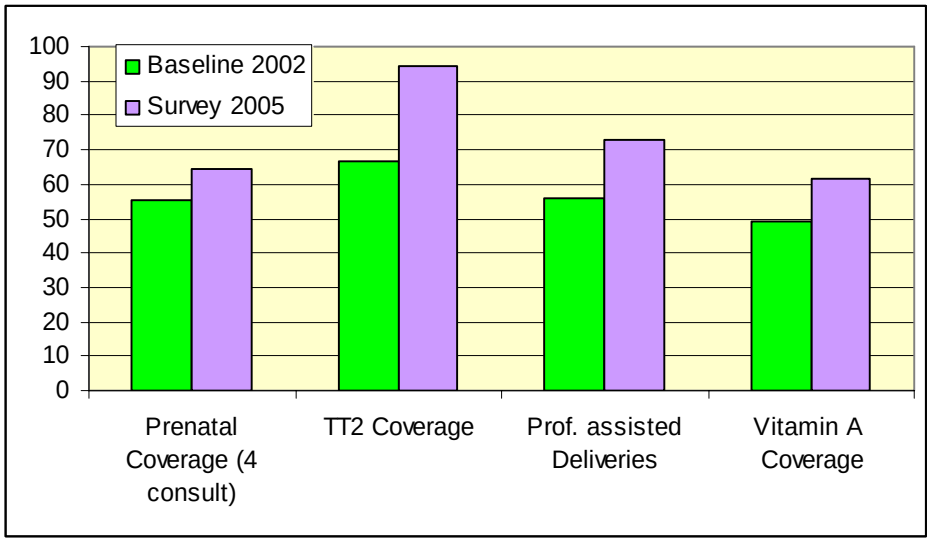
Table 2 shows significant improvements in maternal health indicators between 2002 and 2005. Given the intensity of the project's work in these services, it is reasonable to assume a substantive connection between the work of the project and the outcomes found.

(Annex 3) Table 2: Selected Health Indicators, Pre natal Care, delivery and post partum—Baseline Survey December 2002 and End-of-Project Survey June 2005

Indicator	2002	2005	% Change from 2002 to 2005
% Pregnant women receiving 4 prenatal care visits	54.4	64.5	18%
% Women receiving TT2	66.5	94.6	42%
% Pregnant women with 1st prenatal visit in 1st trimester	59.0	63.2	7%
% Deliveries attended at health units by professionals	55.7	73.1	31%
% Pregnant women with malaria timely treated	49.4	51.1	3%
% Women receiving complete post-natal care	33.9	39.3	16%
% Pregnant women receiving Vitamin A	48.9	61.8	26%

Figure 3 shows improvements in prenatal care and deliveries. In 2002, 54.4 percent of women had attended four prenatal consultations during their most recent pregnancy, rising to 64.5 percent in 2005, an increase of 18 percent. Services in 2005 were of improved quality, moreover.

(Annex 3) Figure 3: Prenatal Care and Deliveries—Baseline Survey December 2002 and End-of-Project Survey June 2005



Prenatal care improvement and increases were accompanied by a significant increase in the coverage rate for Tetanus Toxoid 2, increasing from 66.5 percent in 2002 to 94.6 percent in 2005, a 42 percent increase. This may have occurred in part because responsibility for TT vaccination went from immunization to prenatal services, augmenting the probability that pregnant women would be immunized.

This same change in organization of services may have been responsible for an important increase in Vitamin A coverage for pregnant women. This indicator rose from 48.9 percent in 2002 to 61.8 percent in 2005; an overall increase of 26 percent. As in the case of Tetanus Toxoid, health staff began to administer Vitamin A to pregnant women in prenatal care services on routine bases.

According to the surveys, the number of deliveries attended by professionals in the health units increased from 56 percent to 73 percent (a 31 percent increase). The original 53 percent recorded at baseline cannot be considered low in the African context, so it is surprising that this increased by 31 percent. Several factors may have contributed:

- Integration of prenatal care services and deliveries
- Intensive infrastructure rehabilitation of three of the main periphery maternities
- Construction of a new small maternity in the service area

Reproductive Health and Family Planning

With a total fertility rate of 6.8 children per woman of reproductive age, maternal and child mortality rates in Angola are among the highest in the world; maternal mortality is over 1,300 deaths per 100,000 live births while infant mortality is estimated to be 145 per 1,000 live births. Recognizing that Angola was in desperate need of family planning services, Reforço leveraged funding from other sources.

(Annex 3) Table 3: Selected Health Indicators, Reproductive Health and Family Planning—Baseline Survey December 2002 and End-of-Project Survey June 2005

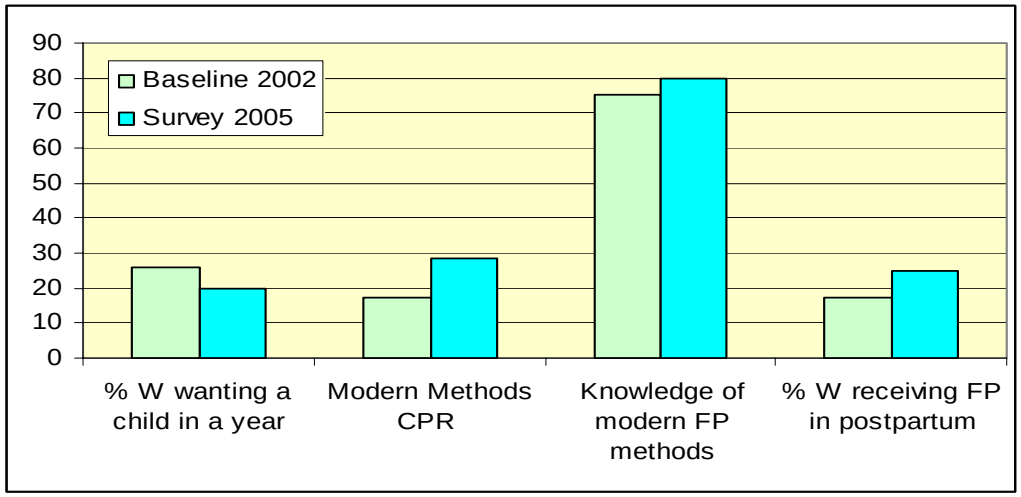
Indicator	2002	2005	% Change from 2002 to 2005
% Women 15-49 using any method of contraception	22.7	28.3	25%
% Women 15-49 using modern method of contraception	17.4	26.4	52%
% Women knowing contraceptive methods	75.1	79.7	6%
% Women receiving FP method in post partum	17.2	25.1	46%
% women who want another child in a year	25.9	19.8	-24%

The December 2002 baseline survey showed a modern method contraceptive prevalence rate of 17.4 percent in the project's target areas, rising a full 52 percent to 26.4 percent in June 2005. This increase in contraceptive prevalence was accompanied by an increase in the percentage of women accepting family planning during the postpartum period (17.2 to 25.1 percent) and a decrease in the number of postpartum women who wanted to have another child during the year (from 25.9 percent to 19.8 percent.)

Figure 4 also shows that the already high level of knowledge regarding modern family planning found in 2002 persisted and even increased somewhat from 75.1 percent to 79.8 percent. The pill and injectibles were the best known methods, while implants, the diaphragm and sterilization were practically unknown. Not surprisingly, the most popular methods at the Project health centers were pills and injectibles.

The number of children a woman had did not influence contraceptive practice. Among women who did not use any contraceptive method, 45 percent stated that they intended to do so in the future. The main reasons for not using contraceptives currently were that women were unmarried, not sexually active or intended to have more children.

(Annex 3) Figure 4: Reproductive Health and Family Planning—Baseline Survey December 2002 and End-of-Project Survey June 2005



The Reforço project successfully mobilized and incorporated support from both Advance Africa and Pathfinder. Advance conducted a mapping exercise in June 2003 to measure the availability of modern contraceptives, to identify barriers to their effective use, and to develop a plan for information and education. Pathfinder International, using private funds totaling $400,000, helped the Project secure good quality family planning services complemented by community based services through several local NGOs. This joint approach focused on expanding access to and increasing quality of family planning and reproductive services.

Key activities to reinforce family planning in the health centers included:

- Strengthen counseling techniques
- Maximize the use of available contraceptives
- Integrate family planning with other maternal health services (particularly prenatal and postpartum care)
- Increase provider knowledge on reproductive health and family planning.

The project also worked to increase the number and range of contraceptives available for health staff to provide to clients interested in FP services, including IUDs. The combined effect of all these interventions seems to have had a positive impact at the level of the services delivered in these health units.

Infant Health

The 2005 survey also suggested important progress in infant health. Table 4 contains the values of key infant health indicators for December 2002 and June 2005.

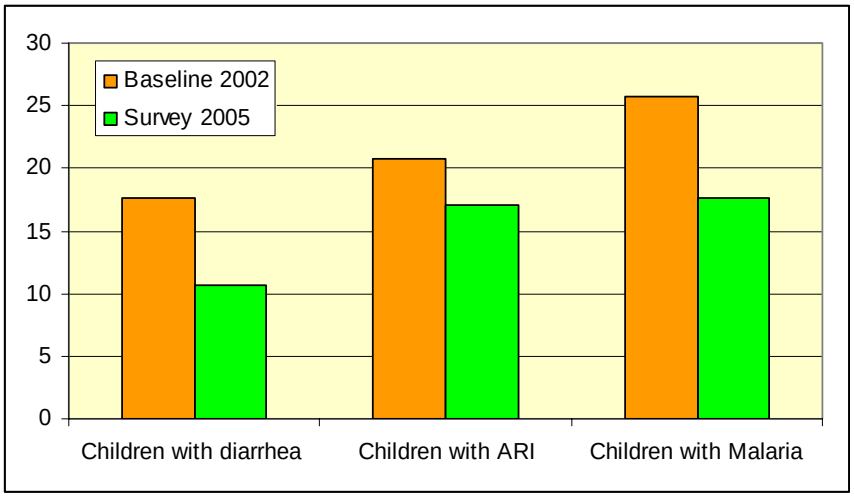
(Annex 3) Table 4: Selected Health Indicators Infant Health and Malaria—Baseline Survey December 2002 and End-of-Project Survey June 2005

% Children < 5 years old with ARI in last 2 weeks	20.8	17.1	-18%
% Children < 5 years old with ARI treated with Antibiotics	15.1	20.5	36%
% Children < 5 years old with diarrhea in last 2 weeks	17.7	10.6	-40%
% Children < 5 years old with diarrhea treated with ORT	25.0	35.6	42%
% Children < 5 years old with malaria in last 2 weeks	25.8	17.6	-32%
% Children < 5 years old with malaria timely treated	48	52.3	7%
% Children sleeping under mosquito nets	28.7	91.7	220%
% Mothers knowing 2 signs for treatment of child illness	33.8	39.3	16%
% Mothers knowing 2 signs for treatment of ARI	63.7	68.2	7%
% Children under exclusive breastfeeding, first 6 mos.	20.4	28.7	41%
% Children 12-23 months fully immunized vacc. card	22.8	24.9	9%
% Children 12-23 months fully immunized mother & card	38.5	40.8	6%
% Children under 1 year who are fully immunized	27.5	29.8	8%
% Home with mosquito nets	42.0	38.4	-9%
% Home with treated mosquito nets	16.1	21.2	32%

The two surveys point to significant decreases in the reported incidence (percent of children under 5 ill during the two weeks prior to the survey) of acute respiratory infection, acute diarrhea and malaria: ARI fell from 20.8 to 17.1 percent; diarrhea from

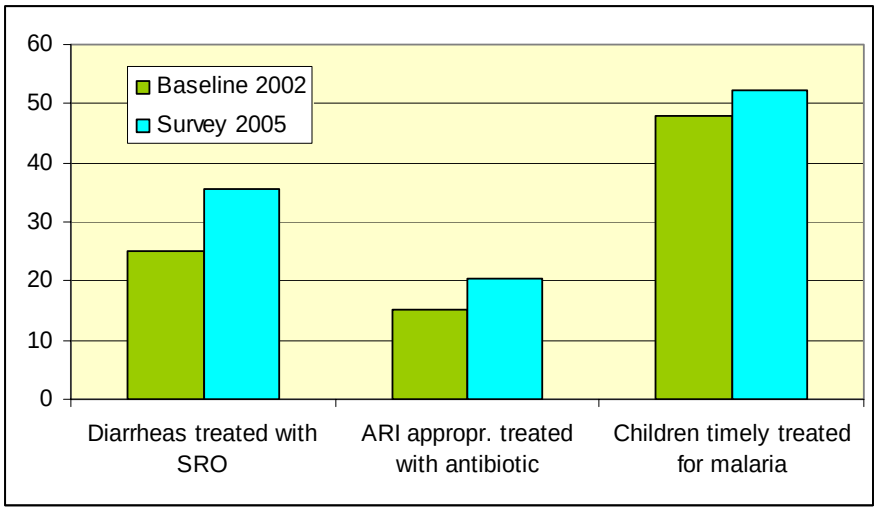
17.7 to 10.6 percent; and malaria from 25.8 to 17.6 percent. The apparent magnitude of these differences may have been exaggerated (especially for diarrhea and malaria) because the baseline survey occurred in November-December and the follow up in June; but it seems likely that at least some of the differences were real and due to project inputs. They may be attributed in part to improvements in the organization and quality of infant health services and to work with community and families.

(Annex 3) Figure 5: Percent of children ill 2 weeks prior to the surveys—Baseline Survey December 2002 and End-of--Project Survey June 2005



Another factor that also indicates progress in child health is the improvement in the treatment of child illness. Figure 6 shows that for the cases of ARI, diarrhea and malaria the surveys indicate substantive improvements.

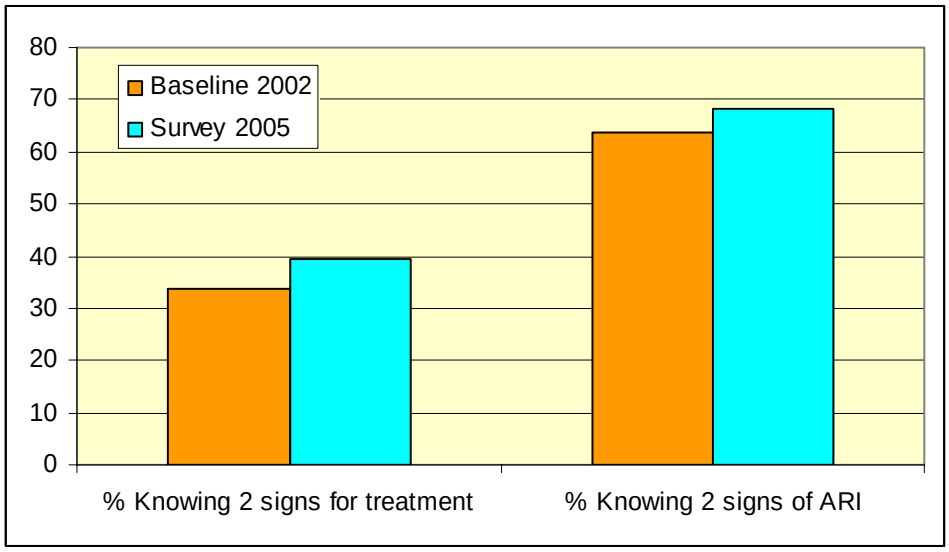
(Annex 3) Figure 6: Percent of children < 5 Appropriately Treated for Diarrhea, ARI and Malaria—Baseline Survey December 2002 and End-of--Project Survey June 2005



While in 2002 only 15 percent of children with an ARI were treated with antibiotics (when needed), 21 percent received this treatment in 2005; almost a 36 percent increase in the cases appropriately treated. Most significantly, in 2002 only 26 percent of children with diarrhea were treated with ORS; this increased to 36 percent in 2005, with a net increase of 42 percent in the use of ORT. Although something similar happened in the case of malaria treatment, the improvement was less significant; only 7 percent more malaria cases were treated in a timely and appropriate manner.

This overall improvement in child health is reinforced by other indicators associated with knowledge about signs of need of treatment in the case of child health and, more specifically, in the case of ARI management.

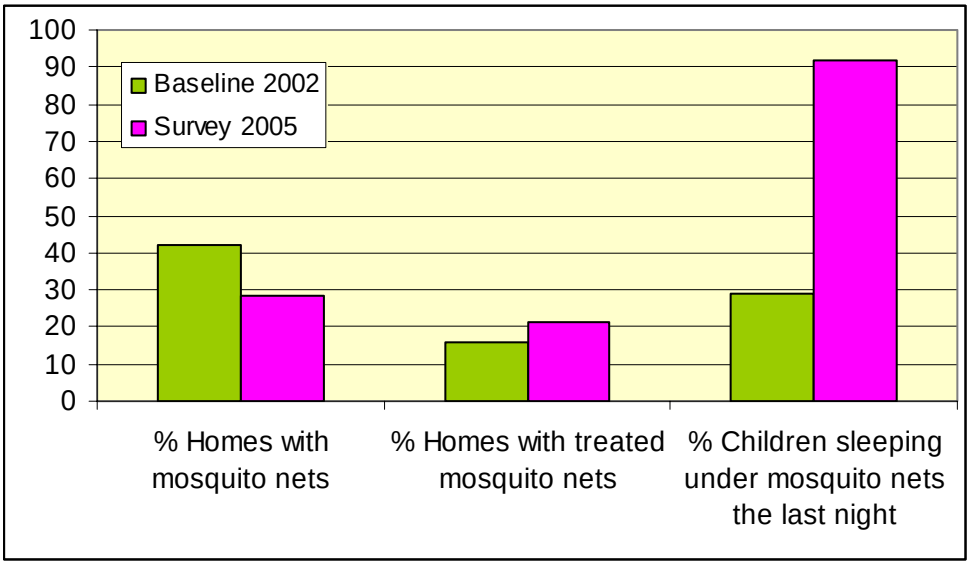
(Annex 3) Figure 7: Percent of mothers who know key signs for treatment of ARI and other child illness—Baseline Survey December 2002 and End-of-Project Survey June 2005



While in 2002, only 33.8 percent of mothers could identify at least two signs for treatment of a child illness, 39.3 percent could do so in 2005, a 16 percent increase. In the case of ARI, the percentage able to identify two signs for treatment rose from 63.7 to 68.2 percent.

Figure 8 shows similarly improved practices and knowledge about protection of children against malaria. Although the proportion of homes with mosquito nets reportedly decreased from 42.0 percent to 38.4 percent, the percentage of children under five in these homes sleeping under nets increased from 28.7 to 91.7 percent. Preventive behavior, in other words, increased almost to the maximum in homes where it was possible, suggesting a very strong demand for appropriate use of nets in the future.

(Annex 3) Figure 8: Percent of homes with Treated and Non treated Mosquito nets and Children sleeping under mosquito nets the previous night—Baseline Survey December 2002 and End-of-Project Survey June 2005



Progress in child immunization was quite modest. Data from the surveys indicates that the percentage of children 12 to 23 months of age fully immunized (according to vaccination cards) only increased from 22.8 percent in 2002 to 24.9 percent in 2005, a mere 9 percent. If information from mothers is also considered, full immunization coverage went from 38.5 percent in 2002 to 40.8 percent in 2005.

Immunization campaigns continue to be the principal tactic to increase child immunization, but the campaigns also act as an important barrier to the development of routine immunization services at the health units. The Reforço project's capacity to redirect immunization services was marginal vis-à-vis the prevalent practice of campaigns and parents' tendency to wait for these events instead of taking children to a health unit to be immunized. The only area where the project may have had some impact was the moderate increase in BCG coverage that was accompanied the improvement of maternity services and the vaccination of newborns, which went from 33 percent in 2002 to over 39 percent in 2005, with a moderate increase of 10 percent.

Conclusion

In this section we presented changes first in **production of services** as described by service statistics, and second in **population health indicators** reflected in the comparison of data from the baseline survey and the end-of-the project based survey.

We emphasize that in an analysis of both that changes in service expansion and health status one must consider many factors that may have influenced and explained the final results. However, we also stress the existence of clear connections that make it very

plausible to conclude that the project's interventions should be considered important factors in making these results possible.

While Reforço's interventions are not solely responsible for the population-level health improvements reflected in the end-of-project survey, a threefold increase in the quality of the MCH services delivered by the health units under the program (as described in Annex I: Luanda Quality Improvement Results) plus a 20 percent increase in the production of MCH services played an important role in increased coverage for child health, maternal health and reproductive health, as well as the improved health status of the population residing in the areas of intervention served by the project.